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DESCRIPTIONS OF SUPPOSED NEW SPECIES OF
HUMMINGBIRDS BELONGING TO THE GEN-
ERA *AMAZILIA* AND *ERIOCNEMIS*.*

BY D. G. ELLIOT, F.R.S.E.

A SMALL lot of Hummingbirds, containing four specimens, having been received at the American Museum of Natural History, Professor Allen placed them in my hands for determination, and description if any proved new. The two now described appear very distinct from any species of the Trochilidæ, of which I have any knowledge, and the remaining two are interesting for the reason that one is the rare *Petasophora coruscans*, of which only three or four specimens are known, and the other exhibits a rather unusual case of albinism. They were stated to have come from Bogota, but their exact habitat is doubtful.

Amazilia lawrencei, sp. nov.

Crown of head, neck, back, upper wing-coverts, and upper tail-coverts, dull bronzy green. Wings purple, base of primaries and secondaries blackish. Throat, sides of neck, and breast glittering grass-green; lower part of flanks and abdomen very dark chestnut brown; under tail-coverts cinnamon. Tail bright chestnut, tips and edges of both webs bluish black, most extensive on lateral feathers, reaching on outer webs nearly to their base. Maxilla black, mandible black with a slight indication of flesh-color at the base. Feet black. Length of wing, $2\frac{1}{2}$ in.; tail, $1\frac{1}{4}$; bill,

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—ED.]

$1\frac{9}{12}$. Total length of skin is $3\frac{5}{12}$ in., but as it has been very much shortened in making it up, it is probable the real length would be nearer four inches.

Habitat. Bogota?

As will be seen from the above description, this bird is not closely related to any of the described species of *Amazilia*. From *A. yucatanensis* and its allies it can at once be distinguished by its black bill, differently colored abdomen and under tail-coverts. In fact, from all the species with the throat and breast metallic green, to which section the *A. lawrencei* belongs, it has well-marked and easily defined characters. I have named it after my life-long friend, Mr. George N. Lawrence, an excellent Trochilidist and well known by his numerous ornithological writings.

Eriocnemis incultus, sp. nov.

Crown of head, upper parts of body and upper tail-coverts bluish black, the feathers on rump and upper tail-coverts margined with rufous. Throat and centre of breast dull lead-color, feathers of throat edged with white. Wings deep purple. Sides of breast bluish black. Flanks black with a deep brownish reflection. Abdomen white spotted with brown. Tail steel-blue, nearly square at tip. Feathers of under tail-coverts gray in centre, glossed with green, and edged with white. Thigh tufts white. Bill black, base of mandible flesh color; feet black. Length of wing, $2\frac{2}{12}$ in; tail, $1\frac{5}{12}$; bill, $\frac{9}{12}$ in.

Habitat. Bogota?

The specimen is not in fully adult plumage as is shown in the rufous edging of the feathers of the rump and upper tail-coverts, as these in the fully matured bird would undoubtedly be a uniform bluish black like the rest of the upper parts. The only species this bird can be compared with is *E. dyselius* from Ecuador, but besides being considerably smaller, *E. incultus* differs in its lead-colored throat, square tail, and lack of the purple hues seen in its large relative, and very differently colored under tail-coverts.

The other two specimens were a very good example of *Petaspheora coruscans*, with the red on throat and breast rather darker and slightly more extended than the specimen in my collection in the Museum, caused probably by individual variation, and a male example of *Chrysuronia ænone* with the under parts pure white, due probably to albinism.

SOME ACCOUNT OF THE BIRDS OF SOUTHERN
GREENLAND, FROM THE MSS. OF
A. HAGERUP.

EDITED BY MONTAGUE CHAMBERLAIN.

THE MINING village of Ivigtut, where Mr. Hagerup was residing when he made the observations which are recorded in these notes, is situated on the southern shore of Arsuk Fjord, Greenland, in latitude $61^{\circ} 12'$, and longitude $48^{\circ} 10'$. Arsuk Fjord is about two English miles in breadth, and is walled by cliffs, which rise abruptly from the water to the height of 1,000 to 1,500 Danish feet, one peak—Mount Kunnak—towering up some 4,400 feet. These cliffs are broken at intervals by small valleys down which streams of water find their way to the sea. Trout are abundant in the streams, and the banks are deeply fringed with low bushes of willow and alder. (The tallest and largest bushes are found close to the fields of eternal ice, at the head of the fjord.) In one of these valleys lies Ivigtut, close by the shore of the fjord.

During the summer months four species of singing birds are found in the vicinity of Ivigtut. Around the houses in the village Redpolls are numerous, and the moist spots near by are tenanted by Lapland Longspurs, while the stony places are selected as building sites by Snowflakes and Wheatears. A few pairs of Mallard Ducks also breed in the neighborhood each season. On climbing the sides of the adjacent hills Snowflakes and Wheatears are met with, as well as a few Ptarmigan and an occasional solitary Raven or Eagle.

In winter the only birds seen on the land are Ptarmigan, Ravens, Eagles, and Falcons, and these, with the hare and Arctic fox, are the only animals seen on the land during the colder months. The reindeer lived on the highlands above the fjord at an earlier period, but now is not found nearer than thirty miles to the northward.

It is the fjord which is at all seasons best furnished with animal life. There an occasional white bear may be encountered—carried in by the 'big ice,'—and several forms of whale, even those of the largest species, are frequent visitors, as are, also, numerous

seals. In summer the Gulls, and in winter Eiders and Auks predominate, of the seafoal that seek food there. Near to the mouth of the fjord, where the walls are especially high and steep, Gulls breed in large colonies—some numbering several thousand.

Amid the adjacent hills lie numerous lakes where Gulls might be supposed to make their nests, but in a careful survey of several suitable localities no evidence was discovered that the Gulls ever visit these inland waters. Mr. Hagerup considers that this neglect of such apparently favorable nesting ground may be attributed partly to the presence of foxes, and partly to the continuous pursuit of the birds by the native Greenlanders and the Danes. Another cause may be found in the fact that lakes at a higher altitude than 700 feet above sea level are not free of ice before the first of July. Along the margins of these highland lakes are thin fringes of stunted vegetation, and in their depths swarm schools of trout that feast during the summer upon larvæ of the mosquito which abound there.

The mean temperature of Ivigtut for the three coldest months of the year is -5° C., and for the three warmest months, 7° C. The lowest point registered by the thermometer during the winter of 1886-87 was -28° C., and the highest temperature during the summer following was 21° C. The mean temperature of January, 1887, was -12° C. The rainfall aggregates $35\frac{1}{2}$ inches in a year.

Arsuk Fjord was covered with ice on November 19, 1886, but during the winter the southeastern gales (which are numerous at that season, and are often accompanied by warm rains) broke off large flakes from the seaward margin of the ice, and as ice did not form again on the places thus opened, the result was that the ice-covered portion of the fjord was continually being diminished, even while the mean temperature was becoming lower. The upper section of the fjord was not free from ice until the first days of June, the date that usually finds the leaves opening on the willow bushes. By the 10th of September these leaves are bleached by the night frosts.

Urinator imber. LOON.—This species is a not uncommon summer visitor, breeding in suitable places. In 1886 the first examples were seen on May 22, and in the autumn the last was seen on November 18, when the fjord was partly covered with ice. In 1887 the first spring arrival was seen on May 5—a young bird, which was shot. Mr. Hagerup thinks it improbable that this species breeds at a greater height than 700 feet, or,

at the utmost, 1000 feet, because the lakes at that altitude are only three months or less free from ice. During June examples are frequently seen on the fjord. Pairs and single birds are often seen flying at a very great height in the air, uttering their loud harsh cry. Several clutches of eggs have been obtained from the natives, one of which was taken on July 20, 1884, near Julianshaab, in latitude 66° N.

Urinator lumme. RED-THROATED DIVER.—This is a summer visitor, but is not common. The first spring arrivals were noted in 1886 on May 28, and in 1887 on May 24. Clutches of eggs have been obtained at various dates from June 15 to July 9. One taken on June 26, near Godthaab, contained a nearly full grown chick.

Fratercula arctica. PUFFIN.—Accidental. One was harpooned near Arsuk on July 15, 1887.

Cephus grylle. BLACK GUILLEMOT.—A common resident. The color of the plumage changes in April. On April 8 some specimens were nearly black, but the greater number were not quite as dark as a female Eider. The eggs are laid in June.

Uria lomvia. BRÜNNICH'S MURRE.—An abundant winter visitor, appearing on the fjord in flocks of one hundred to a thousand birds. They are generally found swimming over very deep water, much deeper than that upon which the Eiders gather,—too deep to admit of their going to the bottom for food. When approached they usually escape by swimming or diving, and but seldom take to the wing. They are very fond of sitting near the edge of the ice, but are never seen to stand while resting either on the ice or land.

In the autumn of 1886 the first comers were observed on November 9, and during the following day large numbers appeared. On April 16, 1887, they were yet numerous, though somewhat diminished, but by the 25th of that month the greater part had left. A few remained through May, and on the fourth day of June some groups of two to five individuals were observed. In 1886 the last small flocks, numbering twenty to thirty, were seen on May 30.

Alle alle. DOVEKIE.—A winter visitant; not numerous near Ivigtut, but more common in the vicinity of Arsuk, at the mouth of the fjord. On January 16, 1887, two examples were shot from the edge of the ice, and at the same time sixty-five examples of Brünnich's Murre were secured, and this will give the reader a fair idea of the relative abundance of the two species.

Stercorarius parasiticus. PARASITIC JAEGER.—This species is said to have been observed occasionally in this vicinity, and is reported as breeding in Greenland.

Gavia alba. IVORY GULL.—Mr. Hagerup has examined two skins of adult specimens, and one of a young bird, which were said to have been taken near Ivigtut several years ago.

Rissa tridactyla. KITTIWAKE.—An abundant summer resident; appearing about March 26, and remaining until October. A few have been seen as late as October 23.

In autumn these birds depart very gradually, but in spring they return in large flocks, and at times the entire colony appears together. On first arriving they settle in the central portions of the fjord, and are always seen in compact groups, whether on the land or water. They are at that season extremely shy, but this shyness lessens as the mating season advances, and then, also, the flocks separate, and during the latter part of April and in May they fly off in small parties or in pairs. On the first day of June, 1887, the fjord below their nesting place was covered with ice, although at that date in 1886 the birds had begun to lay. Some fifteen hundred to two thousand pairs build on a cliff near the mouth of Arsuk Fjord, their nests being placed between two feet and one hundred feet from the water's edge—far below the nests of the Iceland Gull on the same cliff.

During April the Kittiwakes are often observed to leave their feeding place—on the open water, which at that season is some six miles away from their nesting ground,—and rising to a considerable height in the air, fly to the cliff on which they build, and after circling over this spot for a time, as if reconnoitring, uttering their harsh cry all the while, they return again to the water. When flying alone, or in small parties, they are usually silent, but when in large flocks, during the spring or when gathered about their nesting site, or at some unusually fine feast—such as the carcass of a whale—they continually utter a loud harsh cry which, at times, becomes almost a shriek. There is a decided similarity between the cry of the Kittiwake and that of the Gull-billed Tern, and the eggs of these two birds are, also, much alike.

On July 7, 1887, Mr. Hagerup saw an iceberg which served as a resting place for several hundred young Gulls—Kittiwakes, Glaucous Gulls, Iceland Gulls, and Great Black-backed. Several adult Kittiwakes and Iceland Gulls were with the party. As usual the Kittiwakes were on the lower portion of the berg, nearest the water's edge, the different species being sharply separated.

When the fjord is visited by whales the Gulls follow close in their wake and gather in the small animals the whales drive toward the surface.

Larus glaucus. GLAUCOUS GULL.—This is a very common species, and might be called a resident, for even during the coldest weather some individuals are seen daily near the open water, though the examples occurring in midwinter are usually young birds. During March and April, when the Eiders appear in flocks near the coast and feed on mussels which they dive to the bottom for, these Gulls may be observed swimming or flying amid the Eiders, and as soon as a Duck comes to the surface with a mussel, a Gull will make an effort to secure it.

An adult bird, the first of the season, shot on March 20, 1887, was in perfect summer plumage.

The principal breeding place of this Gull in the vicinity of Ivigtut is close by the open sea, near the mouth of the fjord, where they congregate in considerable numbers. In August the young birds assemble in the fjord, especially near the narrow channels, as at Karsuk and Ellerslie, and

feed during that month and the next on the berries of *Empetrum nigrum*. At that season they are easily shot, and their flesh is of a very savory flavor. The breasts of the young of all species of Gull are eaten here as a delicacy.

Larus leucopterus. ICELAND GULL.—This species is abundant in summer, and probably some individuals, young birds perhaps, remain during the entire year; but as no examples have been secured in the winter season, and as these gray Gulls are silent at that time, it is possible that all those observed in winter have been Glaucous Gulls.

In March the Iceland Gulls arrive from the south. In 1887, the first, a flock of several hundred, were seen on March 16, and ten days later another flock of similar size put in an appearance. About a thousand pairs usually breed on a cliff which overlooks the fjord, a short distance above Ivigtut. The nests are placed on the top of this cliff, about 2500 feet above the water. Young birds, fully fledged were found here on July 23. The young are frequently seen in company with the young of the Glaucous Gull.

Larus marinus. GREAT BLACK-BACKED GULL.—This species is not numerous, and though partially resident, is most abundant during the latter part of the autumn.

Fulmarus glacialis. FULMAR.—Mr. Hagerup reports having seen this species daily, on the voyage out from Denmark. It was first observed off the Shetland Islands, and was last seen within a few miles from the shores of Greenland. It has not been met with near Ivigtut. The birds met with in mid-ocean were almost entirely white, but on approaching the eastern shores examples of a dark sootish color were seen mingled with the light colored birds.

Oceanodroma leucorhoa. LEACH'S PETREL.—A few examples have been seen near the mouth of the fjord.

Phalacrocorax carbo. CORMORANT.—This is a winter visitor and though it is seldom seen as far up the fjord as Ivigtut, is quite common near Arsuk which lies closer to the ocean. On the first of April many were still near their winter quarters, and on the 12th of that month four specimens were taken.

The skins of this bird and of the Loon are used in Denmark for ladies' muffs, etc.

Merganser serrator. RED-BREASTED MERGANSER.—Mr. Hagerup considers this a resident species, and reports taking examples in February, April, May, November, and December, though it is most abundant in April and May.

Anas boschas. MALLARD.—A rather common bird. In the immediate vicinity of Ivigtut it is most numerous during the winter months, when small flocks gather on the fjord, keeping close to the shore. A few pairs breed in Ivigtut valley. Two nests with fresh eggs were found there on June 27, 1886, and on June 26, 1887, two ducklings were captured, one in the harbor and the other in the village. They were only three or four days old, and must have been brought down the stream by the parent birds. An

attempt to rear them by hand proved a failure, but the roasting which marked the close of said failure provided an opportunity for testing the flavor of their flesh, which was pronounced delicious.

Glaucionetta islandica. BARROW'S GOLDEN-EYE.—A male of this species was shot near Ivigtut on March 23, 1887, and on April 4 a male and female were seen, but it must be rare here, for neither the Danes nor the Eskimos had seen the birds before.

Clangula hyemalis. OLD-SQUAW.—This species is probably a resident, as it is numerous near Arsuk during the winter. It seldom goes so far up the fjord as Ivigtut, though examples were shot in that neighborhood on March 1, and April 15, 1887.

Histrionicus histrionicus. HARLEQUIN DUCK.—This is a summer resident, and probably breeds in the vicinity of Arsuk Fjord. Mr. Hagerup has taken examples in November and March.

Somateria mollissima borealis. GREENLAND EIDER.—This is a resident and very abundant. Near Ivigtut it occurs during the winter months only, retiring in the breeding season to the small islands near the mouth of the fjord and along the open sea. As the autumn approaches, single birds are seen approaching the fjord; following these are small flocks of twenty or more, and the size of the flocks gradually grows larger until by the middle of December they number several hundreds, and the throng increases as the open water is extended up the fjord by the winter thaws. Mr. Hagerup reports that the birds which go up the fjord during the early part of the winter are females only. He had a good opportunity to examine the flocks, but did not find any males among them until March 11, and then only a few could be discovered, and it was not until the latter part of April that the males appeared in large numbers.

The flocks leave the inland waters for their breeding ground usually about the first week in May, though even into June small flocks remain. These loiterers are mostly females. In 1886 the last flock observed near Ivigtut left there on May 28, but a flock of over fifty, of which very few were males, was seen on June 14, 1887. At that time the 'big ice' surrounded some of their principal breeding grounds, which may account for the birds lingering so late in the fjord. Sets of eggs were taken on June 24 and 29, 1886, and on July 3, 1887.

Somateria spectabilis. KING EIDER.—A winter resident and quite numerous. Mr. Hagerup thinks that possibly the ice on the fjord prevented this species from being observed during the early part of the winter, but it was not until February 1, 1887, that any were seen, and then only one—a male—that was shot near Arsuk. The first to appear off Ivigtut were two males that were captured on February 4, but on the 12th several were seen, males as well as females, and then their numbers rapidly increased for a time. Between the middle of February and the middle of March there were more of the present species than of the common Eider in the fjord, but from the latter date *spectabilis* decreased in numbers, while *borealis* increased, until by April 7 there were not more than one *spectabilis* to twenty *borealis*, and a week later the proportions were about

one to forty. The last adult male King Eider seen in the vicinity was shot on April 23. This species is more frequently observed to stand on the edge of the ice, than is the common Greenland form. The knob on the bill of one shot March 26, 1887, measured 42 mm. in height, and 24 mm. in breadth.

Porzana porzana. SPOTTED CRAKE.—One specimen of this form is said to have been shot near Frederickshaab some years ago.

Tringa maritima. PURPLE SANDPIPER.—This species is common in winter and some breed in the near vicinity, though its principal breeding ground in this section is much further north. It appears on the shores of the fjord early in October, and is seen during the entire winter among the seaweed which is laid bare by the receding water. Three examples were observed on June 4, 1887.

Numenius phaeopus. WHIMBREL.—An example of this species was shot near Arsuk on May 25, 1887.

Charadrius apricarius. GOLDEN PLOVER.—The Director of the colony at Frederickshaab reports taking a young bird of this species in August, 1887. Several adults have been taken in southern Greenland, but no nests have been discovered.

Ægialitis hiaticula. RING PLOVER.—This species was observed on August 15, 1886, near a shallow lake about 1100 feet above sea level. A nest and eggs were found near Godhaven on June 14, 1880.

Lagopus rupestris reinhardti. REINHARDT'S PTARMIGAN.—A resident, but most numerous in winter when flocks come from the north. During the coldest weather it frequents the sides of the lower hills, but in summer is found chiefly at a greater height. Mr. Hagerup reports that very few were found in the vicinity of Ivigtut during the winter of 1886-87. He frequently returned from shooting excursions without having seen one, though in previous seasons as many as three or four hundred had been taken. The birds are rarely met with down in the valley, but on Christmas Day, 1886, some fifty were taken close by Ivigtut.

On June 20, 1886, at about 1000 feet from sea level, a male was taken in perfect winter dress, and on June 28, 1887, a pair were taken that had more white than color in their plumage, the upper parts about two thirds white and the lower parts almost entirely white (or yellowish white). On July 10 a pair were seen that had white only on the belly, and ten days later, at about 1300 feet above the sea, a female and young chicks were met with—the parent in full summer dress. The mother was very solicitous for her young, and in striving to draw attention from them came so near she might have been struck with a walking stick. She continually gave utterance to a guttural cry, which the young answered by pipings much similar to those of a domestic chick. Though quite small the chicks could run nearly as fast as a man, and understood perfectly how to hide in the grass. On the same day, at about 1200 feet, a pair were encountered that seemed, from their behavior, to have lost their young—the appearance of a fox in the neighborhood suggested the cause of their distress. The

female of this pair was in perfect summer dress, but the male had a deal of white on his under parts.

By the middle of October the majority of these birds are in perfect winter costume. Their numbers are kept reduced by their foes—man, fox, Raven, and Falcon.

(To be continued.)

NOTES ON WEST INDIAN BIRDS.

BY CHARLES B. CORY.

A CAREFUL comparison of a large series of specimens representing the genus *Bellona* tends to show that *Bellona exilis* (with slight variations) occurs as far south as St. Lucia, or St. Vincent, if we do not recognize *B. ornatus* from that island. A series of the so-called *B. ornatus* from St. Vincent, now before me, shows the blue coloration of the terminal portion of the crest to be quite constant. Some specimens from the northern islands approach it, although none are quite so highly colored. The blue color on the crest of *B. cristata* has a strong purple tint in some lights. Assuming that *B. ornatus* represents a fairly good insular form, we have

Bellona exilis (Gmel.). — Porto Rico, St. Thomas, St. Croix, Saba, St. Kitts, St. Bartholemew, Montserrat, Nevis, Dominica, Marie-Galante, Desirade, Grand-Terre, Guadeloupe, St. Lucia, and Martinique.

Bellona ornatus (Gould). — St. Vincent.

Bellona cristata (Linn.). — Grenada and Barbadoes.

In 'Birds of the West Indies' I have given *B. cristata* from St. Lucia, Martinique, and St. Bartholomew, as it was recorded from those islands by other writers. It is probable that *B. cristata* is restricted to the islands of Grenada and Barbadoes.

Volatinia splendens (Vieill.).

This species is given in the 'Birds of the West Indies' as *Volatinia jacarina* (Linn.), the error being caused by my being

unable to procure specimens from Grenada. Through the kindness of Mr. J. Grant Wells, I have lately secured several fine specimens of this interesting species, and it turns out to be *V. splendens* (Vieill.). None of the birds sent have any visible trace of white on the wing, and all have the under wing-coverts and base of the quills black. *V. jacarina* does not occur in the West Indies.

***Certhiola godmani*,* sp. nov.**

Male (Type, No. 14,179, Coll. C. B. Cory, Grenada, W. I. J. Grant Wells):—Smaller than *C. saccharina* and slightly darker, more white on the base of the quills, a broad bright yellow patch on the rump, color of the throat and underparts similar to *C. portoricensis*.

Length (skin), 3.88; wing, 2.18; tail, 1.45; tarsus, .62; bill, .48 inch.

C. godmani has the yellow on the underparts brighter and darker yellow than *C. saccharina*; the throat is very much lighter, and the rump shows the bright yellow of the belly, and not the dull olive yellow of *C. saccharina*.

A large series of the black form of *Certhiola* from St. Vincent and Grenada shows slight differences, which are apparently constant. If *C. saccharina* were common to both islands, we should not admit of separating the black forms from Grenada and St. Vincent, as it is quite probable that *C. atrata* represents a melanistic phase of *C. saccharina*, and is not specifically distinct. Should this prove true, the black form from Grenada would be *C. godmani*, but we should hardly be justified in asserting this to be the case without much more knowledge of the birds than we have at present, and I therefore propose the name *Certhiola wellsii* for the black Grenada bird, pending further investigation.

***Certhiola wellsii*, sp. nov.**

Male (Type coll. C. B. Cory, No. 14,178. Grenada, W. I. J. Grant Wells):—Similar to *C. atrata*, but somewhat smaller. The bill and feet more slender.

Length, 3.65; wing, 2.10; tail, 1.50; tarsus, .65; bill, .46 inch.

* To F. Du Cane Godman, of London, England.

† To J. Grant Wells, of Grenada, West Indies.

BIRDS OBSERVED AT SANTA BARBARA,
CALIFORNIA.

BY W. A. JEFFRIES.

IN THE early spring of 1883 the old Mission town of Santa Barbara in California, still a little off the main line of travel, seemed to offer to my brother and myself in search of quiet an escape from the ever flitting excursionist and the feeling of unrest and annoyance that his presence is very apt to cause his neighbor.

Finding on our arrival, March 6, that it was not practicable to take rooms out of the town, we settled ourselves well out toward the Mission, on the edge of a lot several acres in extent covered with trees and shrubbery. Placed as we were, early morning collecting could not be done with regularity, as within the town limits shooting was not allowed, while our horses, upon which we relied almost entirely, could not be had before seven. Our habit was to make as early a start as possible, in the saddle if intending to go into the hills, in a buggy if up the valley. We collected either by shooting from the saddle when necessary, or on foot when, as seldom happened, the cañons were inaccessible to our unshod native horses.

At the time of our visit the edge of the town reached nearly to the Mission, beyond which the choice spots only were cultivated, much of the land being used for grazing. The shore line was partly a bluff, partly gently inclined beach with, as a rule, small lagoons or mud flats behind it, at all events land lower than the crown of the beach. Salt water marshes were absent.

In every case where a scientific name is given we took skins. Birds simply seen, I omit.

Previous to March 30 we failed to note any spring flight. Some of the species were present in larger numbers than on our arrival, but new comers were not noted.

Tilled lands were the feeding grounds of *Sturnella magna neglecta*, *Xanthocephalus xanthocephalus*, and very large flocks of *Scolecophagus cyanocephalus*. Passing up the valley, *Chondestes grammacus strigatus*, usually in pasture lands, *Agelaius gubernator*, near pools, as also *Ægialitis vocifera*, were abundant. Large flocks of *Carpodacus mexicanus frontalis*

were daily noted all along the valley. Wherever the finely powdered soil had been stripped of vegetation and allowed to bake in the sun *Speotyto cunicularia hypogæa* was found.

Cathartes aura proved abundant and very tame. Several Hawks were seen, but proving shy, we took *Accipiter cooperi* and *Falco sparverius* only. *Zenaidura macroura* showing a preference for cultivation was rare. Two or three pairs of *Geococcyx californianus* were seen almost daily, and were not very shy unless chased, when they at once made for brush.

Of the *Zonotrichiæ* the most abundant was *gambeli*, next so *coronata*, but few of *intermedia* were taken.

Woodpeckers, if we except *Colaptes cafer*, found everywhere, were not common, presumably from the lack of heavy timber. *Melanerpes formicivorus bairdi* we found almost exclusively in live oaks. *Dryobates nuttallii* was seen and taken, as also *D. pubescens gairdnerii*, the latter being the rarer. *Salpinctes obsoletus*, found in rocky cañons only, was seldom seen. One such cañon to which a shepherd boy took us in search of this Wren was fairly alive with snakes; every step seemed to startle up one or more. Our bare-footed guide soon beat a retreat.

The common Hummer found everywhere was *Trochilus anna*. *T. rufus*, although numerous, was very generally found in or near live-oak groves. In such a grove we found it breeding in numbers April 16. The nests were placed on the under side of the fronds of a large fern which grew luxuriantly in the deep shade.

March 14, a single specimen of *Junco hyemalis* was taken from a flock of seemingly similar birds. When startled they flew too near a house to allow of our taking a second example. *J. h. oregonus* was not seen by us before April 13.

Callipepla californica vallicola, although abundant, was not easily taken because of their fondness for treeing on the cañon side, or racing when on the level. *Aphelocoma californica*, *Melospiza fasciata heermanni*, *Pipilo fuscus crissalis*, *Vireo huttoni*, *Dendroica auduboni*, *Parus inornatus*, *Chamaea fasciata henshawi*, *Psaltriparus minimus californicus* were all present in good numbers, as also *Troglodytes aëdon parkmanii* on the higher ground almost exclusively. *Sialia mexicana*, breeding March 20, *Melospiza lincolni*, *Polioptila cærulea*, and *Sayornis saya* were none of them common. This was the case also with *Sayor-*

7
nis nigricans before the migration arrived. *Empidonax difficilis* and *Spinus psaltria* appeared March 18, *S. tristis*, much less common than *psaltria*, on March 20.

A single Robin was shot from the saddle out of a flock of three or four flying over a road on a cañon side. However, as the horse declined to stop for some distance, it was not marked down and could not be found. No more were seen by us.

It not being possible for us to hire the only boat in the town, as it was in constant use as a fisherman, we were not able to do any collecting off shore. Cormorants were abundant, sunning themselves on the piles of an old wharf, but well out of our reach. Scoters in large flocks and many Divers used as a feeding ground the strip of water about one quarter of a mile or less broad between the beach and the seaweed which, growing very long and lying on the surface of the water in dense masses, forms a very fair breakwater along the entire beach at Santa Barbara, the line of seaweed being approximately parallel with the beach line.

Occasionally we saw Scoters sunning themselves on the crest of the beach, and by running our horses so as to head them off managed to take a few. All were *Oidemia perspicillata*.

On foggy mornings, if by chance we could shoot a single Gull, others were soon decoyed in to the fallen bird; in this way, though not caring from such data to hazard an opinion as to their relative abundance, we took *Larus glaucescens*, *L. occidentalis*, and *L. californicus*, and did not consider either species as rare.

A small flock of Gallinules lived in a patch of reeds on the edge of a lagoon into which *Mergus serrator* came rarely. *Cistothorus palustris paludicola*, from lack of proper ground, was also rare.

On the crown of the beach *Otocoris alpestris rubea*, *Anthus pensilvanicus* and *Ægialitis vocifera* were all abundant. *Ægialitis*, we thought we had good reason to believe was breeding, but failed to find a nest. Of the *Ammodrami*, *A. beldingi* was more often taken at or next to the shore line, *A. sandwichensis alaudinus* more inland.

Tachycineta thalassina in abundance, *T. bicolor* sparingly, were seen more frequently at the water's edge than inland, but were found occasionally well up the valley.

All of the foregoing were taken previous to March 24, on

which date we rode to the Ojai Valley not finding any new species; Quails, Jays and Woodpeckers were much more numerous than at Santa Barbara. In the Ojai we were detained by heavy rains one day. The second day, the rain falling heavier than ever, we rode back over a badly washed road; frequent patches of adobe clay proved slippery even for California horses.

After the storm new birds began to arrive. March 30 *Tyrannus verticalis* and *T. vociferans* appeared simultaneously in small scattered flocks, each species keeping a little away from the other. Males and females were taken that day from the same flock. *T. vociferans* passed through before April 22. *T. verticalis* settled down in several places. March 31 our only specimen of *Spizella socialis arizonæ* was taken, as also *Sitta carolinensis aculeata*.

Icterus bullocki, *Turdus aonalaschkei auduboni*, *Sylvania pusilla pileolata* came April 2, *Stelgidopteryx serripennis* April 4, *Vireo gilvus* April 5, *Helminthophila celata lutescens*, *Dendroica nigrescens*, and *Spinus lawrencei* April 6, *Geothlypis trichas occidentalis* April 7. April 5 our type specimen of *Trochilus violajugulum** was taken. April 10 we first found *Vireo solitarius cassinii* which, very possibly, had up to this date escaped our attention; also on this day, just above the Mission in the mouth of the cañon, our sole *Myiarchus cinerascens*.

Large flocks of *Numenius hudsonicus* came to the mud flats on the 11th, *Recurvirostra americana*, *Totanus melanoleucus*, and *Anas cyanoptera*, all sparingly, on the 19th. *Tringa minutilla* from March 17 to April 4 was common; later on much less so. *Pipilo maculatus megalonyx* April 16, *Petrochelidon lunifrons* April 17, *Ardea candidissima* April 24, completes our list of species taken. April 21 the Shore-birds came in large numbers, as also a few Terns, but as we had packed up for the North we could not preserve skins, and hence did not collect.

More than once during our stay a hot morning was followed by squalls from the north, which on clearing left the peaks of the Coast Range slightly whitened with snow. The fall of temperature in the valley was very sudden and sharp. After such squalls, and on very windy days, *Micropus melanoleucus* came down to the lower lands in numbers.

* Auk, Vol. V, p. 168.

ON THE HIATUS EXISTING BETWEEN THE BREEDING RANGES OF THE LOGGERHEAD AND WHITE-RUMPED SHRIKES.

BY G. H. RAGSDALE.

DURING the past two years I have had much correspondence on this subject. I was drawn into the belief that there must be a gap somewhere by Mr. Nehrling's record of the breeding in Harris County, Texas, of the White-rumped Shrike, when I had never known the birds to remain through the summer in Cook County.

The following observers report "no Shrikes breeding" at their respective stations in Texas: W. W. Westgate, Houston; J. A. Singley, Giddings; R. E. Rachford, Beaumont; H. F. Peters, Bonham. Although I have not detected any Shrike breeding in Cook County, and have copious notes on their departure as late as May, and return as early as July, I have a set of eggs taken in Cook County by Mr. E. C. Davis, who saw a Shrike leave the tree in which the nest was. These eggs agree well with a set I have from Colorado, Texas, three hundred miles southwest of Gainesville, but are larger. Mr. Benner, in the 'Ornithologist and Oölogist' (Vol. XII, p. 165), reports taking the eggs of the Loggerhead Shrike in the vicinity of San Antonio, Texas, but the specimen was evidently *excubitorides*. Mr. J. A. Singley wrote me last season that some one took the eggs of the White-rumped Shrike at Graham, Texas, one hundred miles west of Gainesville. These points I consider on or near the southeastern limit of breeding of *Lanius ludovicianus excubitorides*, in Texas.

Mr. Hardin D. Thweatt of Hickory Plain, Arkansas, while teaching school at West Point on Little Red River, a tributary of White River, Arkansas, made a record of all Shrikes seen, and but few were seen, and that in March, 1887. The only Louisiana record of breeding of the Loggerhead is from Mr. Geo. E. Beyer, of New Orleans. On May 13, 1888, he secured two old and three young, near Franklinton, Lat. $30^{\circ} 52'$, from a pine tree near their nest. At Franklinton, May 15, 1887, he secured two adult birds, and was shown the nest in a pine tree, from which a cat

was seen to take the young. On May 29, Mr. Beyer saw a pair at Greensburg, Louisiana, Lat. $30^{\circ} 49'$. On June 5 he shot a pair near Clinton, Louisiana, Lat. $30^{\circ} 52'$, and saw their nest in a pine tree.

It will be remembered that no Shrike was observed by Mr. Beckham at Bayou Sara, Louisiana, but *ludovicianus* was quoted on the authority of Mr. Wederstraudt (Bull. N. O. C., Vol. VII, No. 3, p. 162). Mr. O. P. Hay saw a Shrike at Jackson, Mississippi, "in summer" (Bull. N. O. C., Vol. VII, p. 91). I have shown that the birds return as early as July in Cook County, Texas, and this record only shows, as does Mr. Beckham's, that no Shrike is common in summer in those localities. In 1886, Mr. J. T. Moore of Oxford, Mississippi, reported that he had taken the eggs of both Loggerhead and White-rumped Shrike at Oxford, but that both were very rare. Dr. Rawlings Young of Corinth, Mississippi, reports no Shrikes in that locality in summer. Mr. J. T. Park of Rising Sun, in northwestern Georgia, wrote me that no Shrikes bred there; but Mr. H. B. Bailey has reported the breeding of *Lanius ludovicianus* in Wayne and McIntosh Counties, Georgia, which are on or near the coast.

At Greensboro', Alabama, Dr. Wm. C. Avery, on April 25, 1887, took six eggs of the Loggerhead Shrike from the end of a limb of an old field pine, eight feet from the ground, and saw another nest higher up in a pine tree in the spring of 1888.

Mr. L. M. Loomis reports the Loggerhead as a resident at Chester, South Carolina.

The birds seen by Mr. Fox in Tennessee, and reported in 'The Auk,' Vol. III, p. 317, were probably migrating White-rumps.

I have failed to learn of any Shrike breeding in Tennessee, Kentucky, or Arkansas, Mr. Pindar of Hickman, Kentucky being the only observer to report from that State, and none from Tennessee, and only one from Arkansas. Mr. Goss reports from personal observations the White-rumped Shrikes breeding throughout Kansas.

Mr. O. Widmann reports the Loggerhead as breeding at St. Louis, Missouri, but *bleaching out* in spring and summer, and to the northwest of St. Louis only the White-rumps are reported in summer.

From the foregoing I conclude that the A. O. U. Committee correctly relegated the Loggerhead to the Gulf States, and that it

prefers pine lands for nesting. I also conclude that there is a neutral strip upon which neither form is found during May and June, and further, that about the only way to identify a Shrike of this species is to take it on its breeding grounds during the breeding season.

PICICORVUS COLUMBIANUS (WILS.),
CLARKE'S NUTCRACKER. ITS
NEST AND EGGS, ETC.

BY CAPT. CHARLES E. BENDIRE.

THROUGH the kindness of that indefatigable naturalist, Mr. Denis Gale, of Gold Hill, Colorado, I am enabled to give to the readers of 'The Auk' his observations on the habits of Clarke's Nutcracker during the breeding season, as well as a good pen picture of the nest and eggs, taken by him March 5, 1888, he having, with his usual generosity, presented both to the National Museum collection. Since I described the nest and eggs of this species in Vol. I of the 'Bulletin' of the Nuttall Ornithological Club, July, 1876, page 44, and again more fully in the April and May numbers of the 'Ornithologist and Oölogist,' pages 105-107 and 113-114, no other nest with eggs has been found, as far as I am aware, and the only account I can find of the taking of one since then, which, however, contained young only, is that of Capt. B. F. Goss, of Pewaukee, Wisconsin, published in the 'Bulletin' of the Nuttall Ornithological Club, Vol. VIII, Jan. 1883, pages 44 and 45.

Mr. Gale's notes read as follows: "On Feb. 16, 1888, while passing down a mountain trail, my attention was drawn to the peculiar note of alarm given by this bird, *Picicorvus columbianus* — not unlike that of our Jay or Magpie — which was promptly answered by its companion. I discovered the birds in separate trees, about fifteen yards distant from each other, and probably fifty yards from where I was standing. Upon closer inspection I perceived that both birds had twigs in their bills. They watched each other, and me as well, for perhaps ten min-

utes, when another call-note was exchanged between them, somewhat similar to the first which had arrested my attention. This second note seemed to me to indicate less alarm; there was more of chuckle or derision in it. The twigs the birds had in their bills were dropped nearly simultaneously, and the pair swooped down the mountain side, and were lost to view almost immediately.

"I determined to follow up this clew, and day after day I closely examined every tree and bush within a radius of half a mile of where I first saw the birds. This close scrutiny resulted in the discovery of three skeletons of old nests, which I assigned to this species. Several entire days were spent at this work without once seeing a bird, and I began to despair.

"On March 5, I tried in a new direction, and when about one third of the mountain had been climbed, about a mile distant from my previous operations, I observed a Nutcracker flying high over my head, and this manœuvre was within an hour repeated a second and a third time, the bird seemingly each time coming from the same quarter. This, I felt assured, meant something, and somewhat renewed my hopes of success. I went on steadily with the search, which, to be effectual, I had arranged in this way: I worked up the mountain side, right and left, upon a swath half a mile wide, taking in from thirty to fifty feet of ascent each time. Eventually I came upon the object of my search, about three hundred yards distant from my second starting point, and about two hundred yards higher than the locality where I had first noticed the bird flying over my head. While doing this, he evidently was reconnoitring, and each time, upon making his rounds, passed near the nest, assuring his mate thereby of his watchfulness. As I worked gradually nearer the nest he was not to be seen, and this seeming indifference of the male, and the pertinacity of the female in covering her nest until almost forcibly dislodged, are great odds against even the most energetic collector.

"The nest was placed eight feet from the ground, in a bushy black pine (*Pinus ponderosa*?) which branched out from the ground with a probable spread of fifteen feet. The tree was about twenty feet high. The nest was situated about thirty inches from the main stem, near a bunch of scrub, and firmly saddled on a three-pronged fork of a stout limb three inches in diameter, with smaller ones growing about and around it, so that nothing save

the overthrow of the tree itself could possibly dislodge it. I discovered the female on the nest while on the upper side of the hill above the nest level. Stepping up within easy reach, the bird seemed to tremble with fear, and slightly snapped her bill, pleading forbearance rather than defiance. Tipping her tail with my hand, she gracefully and noiselessly glided over the edge of the nest, and with closed wings swooped down the mountain side for twenty-five yards or so; then arresting her downward course, with open wings at a right angle, described the peculiar undulating flight of a Flicker (*Colaptes*) for about fifty yards, and alighted upon a tree in the neighborhood. After noting this, and viewing for a moment two beautiful eggs in a snug, compact nest, I hastily withdrew. The second day after, I found one addition, making three eggs in all, which seems to be the full complement for the species. I waited, however, four days later before taking possession. Each subsequent time I disturbed the female from the nest, she repeating the exact manœuvres she did at first. While I was taking the eggs from the nest she watched me from a tree about fifty yards distant, and for the first time gave the alarm as I had the second egg in my hand. After securing the eggs, I moved away a short distance to note proceedings on the part of the birds. The male was flying about some two hundred yards distant. In five or six minutes after I left the nest site the female, with a single stop for half a minute at the foot of the tree, again covered the nest. After watching her a short time, I again approached her, and when within about ten feet of her, she silently flew off, and protracted her flight in the direction the male was last seen to head. I left the place almost frozen, returning the next day to secure the nest complete in position.

"The nest proper is placed on a platform of dry twigs, mostly those of the western juniper (*Juniperus occidentalis*); these average about three sixteenths of an inch in thickness, and vary from eight inches to a foot in length. The twigs, which also help to form the sides of the nest, are deftly wattled together amongst themselves, as well as with some of the smaller lateral branches of the pine limb on which the nest is securely saddled, and are further held together and strengthened with the help of coarse strips of the inner bark of the juniper mixed amongst the twigs and admirably suitable for the purpose. The inner nest is a mass of the latter material, only much finer, the bark having been well

picked and beaten into fibre, and quilted together with the addition of decayed grasses and pine needles, forming an exceedingly snug and warm structure. No hair or feathers of any kind enter into the composition of this nest. The walls of the inner nest are fully one and a half inches thick." Outwardly the nest measures eleven inches in diameter, by seven inches in height. The inner, cup-shaped cavity is four inches wide by three deep. The eggs, three in number, measure $1.37 \times .90$, $1.36 \times .89$, and $1.32 \times .89$ inches. These are elongate ovate in shape, the ground color is a light, delicate, greenish blue, and they are sparsely marked with small, peppery-like spots of grayish brown, mostly about the larger end, and underlying shell markings of grayish lavender. This description applies to the most boldly marked egg of the set, the markings on the remaining two being much fainter and more sparse.

"In the latter part of May, 1888, I was much pleased and interested to find a nest of *Picicorvus columbianus*, in a red spruce tree, about twenty-five feet from the ground, placed close up to the stem of the tree, and on the lee side from our prevailing winds. It was quite bulky, about two thirds the size of our common Colorado Crow's nest, and closely resembling it in make-up and appearance. Its outside was a gathering of sticks and twigs, fastening it in the branches of the tree, several of which were involved. The middle structure was principally composed of the inner bark of the juniper tree. It had accommodated a brood that season. Its value and interest consisted in fixing the identity of the old skeleton nests I had found as belonging to this species beyond a doubt, and altogether they clearly suggest a wider choice of nest sites than the one I sent the National Museum could possibly permit of, by analogy. I discovered altogether five of these old skeletons and two new nests of this season. Four of these occupied similar sites in spruce trees, while three were placed in pines. The nest sent to Washington was the only one *saddled* on a branch away from the main stem. None were over twenty-five feet from the ground, and two I found as low as eight feet up. The majority of sites offered little concealment, but in every case especial care was observed in selecting one affording thorough protection to the nest, and holding it most securely against the assaults of the fierce March winds prevailing in this mountain region. As a suitable and completely hidden

shelter seems to be difficult to find, a more or less partial one is chosen. None of the nests faced the direction of our prevailing winds, and while none were in trees thickly growing together, only one nest was found in what could be termed an isolated tree.

"Five of the sites were within one third of the mountain's height, and two only about one third up. The site of the nest taken containing eggs was at an altitude of about 8500 feet. I do not think that here, in Boulder County, the Clarke's Nutcracker nests much, if any, below this point. It breeds up to 10,500 feet, but at such an altitude fully a month later. The nest found by me was, in my opinion, an early one. These birds feed on beetles and other insects in summer, and they can be seen the year around scavenging about lumber and mining camps, at the foot of the range. Their visits are timed with unerring precision; both they and the Rocky Mountain Jay (*Perisoreus canadensis capitalis*) are on the lookout for the scraps to be found about such places after the dishes are washed, and they seem upon each such occasion to be just in time, and after their feast, more or less satisfactory, according to circumstances, they move off as quickly as they came."

In order to give as full a synopsis as possible of the breeding habits of this interesting species, and as in all probability some of the publications containing the accounts may not be accessible to the majority of the readers of 'The Auk,' I will incorporate the more important portions bearing on the subject in this paper. Capt. B. F. Goss met with these birds in May, 1879, along the western base of the Sangre de Christo Mountains, a few miles southeast of Fort Garland, Colorado. He writes as follows in the 'Bulletin' of the Nuttall Ornithological Club, Vol. VIII, Jan., 1883, pages 44 and 45:

"Clarke's Crow is a common resident of the region described, but has a higher range than Maximilian's Jay. I found it most abundant in the mountain valleys, above the foot hills. In that dry climate the trees on the sunny exposure of the valleys are dwarfed, scattering, and interspersed with thick bunches of bushes, while the opposite side, looking northward, is covered with a heavy growth of timber. It was in and around such timber that I found these birds, and there I looked diligently for their nests. Many times they showed great concern and watched me closely, peering down and scolding from the thick foliage overhead. I thought their nest must be near, and searched everywhere in the neighborhood, even climbing to the tops of high trees; but I have no doubt

now that their nests were across the valley, half a mile away. I spent more than two weeks in this fruitless search, returning every night to camp, tired and disappointed. Any one who has tramped over mountains, in the light air of 9000 feet elevation, will understand how exhausting such labor is; but I particularly wished to get the eggs of this bird, was sure they were nesting in the neighborhood, and did not like to give it up. One evening, after a particularly hard day's work, as I sat by my campfire, looking up the valley, one of these birds left the high timber and flew across to the other side. Its direct and silent flight suggested that it might be going to its nest, and that I had been looking in the wrong locality. Accordingly, with renewed hope, I started early next morning to the hill where I had seen it go. After climbing over the rocks and through the bushes for some time I sat down to rest, when I noticed something on a tree about thirty feet away that looked more like a squirrel's nest than anything else. On closer inspection, however, I saw that it was a bird's nest, and climbing up a short distance, was delighted to find a Clarke's Crow sitting on its nest. She sat very close, only leaving when touched by my hand. The nest was built near the end of a horizontal limb, about ten feet from the ground, in an open, conspicuous situation. It was bulky, coarsely constructed, and very deeply hollowed, the bird when on it showing only part of her bill and tail, pointing almost directly upward. She was soon joined by her mate, when, after hopping about in a listless manner for a few minutes, both disappeared. They were silent when near their nest, but noisy enough elsewhere. On further search I found several old nests and one new one, apparently abandoned. All were similar in construction and situation to the one described, and evidently belonged to the same species. The nest with young was found May 21. From finding these nests, and from other observations made, I am satisfied that Clarke's Crow breeds in open, warm situations, preferring steep hillsides; had I known this earlier I believe that I should have found more of their nests."

My personal observations of this species were published most fully in the April and May numbers of the *Ornithologist and Oölogist*, Vol. VII, 1882, and extracts therefrom read as follows:

"For some reason not easily explained I had come to an almost positive conclusion that Clarke's Crow nested in hollow trees, and as they act in many respects like certain of our Woodpeckers and frequented the juniper groves fully as much as the pine timber this seemed plausible enough* The finding of several young birds of this species but a few days out of their nest on May 5, 1875, sitting on the branches of a large

* It must be remembered that at that time nothing positive was known about the breeding habits of Clarke's Nutcracker, excepting Mr. J. K. Lord's account, that in the vicinity of Fort Colville, Washington Territory, they bred in the tops of the tallest pine trees, a statement which I doubted and rather favored Mr. R. Ridgway's surmise of their nesting in hollow trees or stumps.

juniper, in the trunk of which I found a cavity filled with rubbish, and which evidently had been used as a nesting site by either a Sparrowhawk or Red-shafted Flicker the previous season further confirmed me in this view, and caused me to jump at the conclusion that the young birds I saw on that tree clamoring for food had been raised in this very nest. Judging from their size they had left it about a week previously, and I concluded that in order to find eggs I must commence looking for them at least a month earlier or about April 1st, and gave up further search for the season. I waited impatiently for the opening of the season of 1876, which was a very late one. To make sure I started on a systematic search for the nests of these birds as early as March 20th, the snow being at the time from two to four feet deep in the localities frequented by them. During the next four weeks I made at least a dozen trips to the haunts of these birds, and I believe I examined every hollow tree and woodpecker hole known to me within a radius of eight miles of the post, the trees examined being mostly junipers. As I found nothing in them, other species of birds not having commenced nesting yet, and being positive that the Clarke's Crow was then breeding somewhere in the immediate vicinity, from seeing a few about constantly, I commenced to examine the pine trees growing amongst the junipers on the outskirts of the forest proper. I saw nothing, as I thought, which might be taken for a bird's nest in any of the pines (*Pinus ponderosa*), but noticed now and then a round bunch or ball, composed seemingly out of the long hypnum moss taken from the trees themselves, in some of them, which I supposed to be squirrels' nests, particularly as the little Fremont's chickaree (*Sciurus hudsonicus fremonti*, Allen) is quite commonly found in this vicinity. As the majority of these quasi squirrels' nests were by no means easily got at, and having tried to start their occupants with sticks, stones and now and then even with a load of shot and failed invariably to bring anything to light, I ceased to trouble myself any further about them, and more puzzled than ever was about to give up the search when on April 22d I saw a Clarke's Crow flying quietly and silently out of a large pine tree about fifty yards in front of me. This tree had a rather bushy top, was full of limbs almost from the base and easy to climb. As I could not see into the top I climbed the tree, failing to find any sign of a nest therein, and completely disgusted I was preparing to descend again when I noticed one of the supposed squirrel's nests near the extremity of one of the larger limbs about the centre of the tree and about twenty-five feet from the ground, and setting therein, in plain view from above, not a squirrel but a veritable Clarke's Crow.

Well, so I had found their nest at last, quite unexpectedly, and not any too soon, either. As it was, I was almost too late, for the nest contained a young bird just hatched and two eggs with the shells already chipped and on the point of hatching. However, as even damaged specimens, particularly rare ones like these were, are better than none, I took them along but left the young bird in the nest. The parent bird allowed me to almost lay my hand on her before she fluttered off, and

I had scarcely gotten two feet from the nest before she was on it again. During the whole time she remained perfectly silent. Not half an hour after finding the first, I had found a second nest which contained three young birds perhaps a week old. These I sacrificed to science, making a skin of one and preserving the other two in alcohol. They are now, as well as the nest, deposited in the National Museum at Washington, D. C. Between April 24th and 30th, '76, I found at least a dozen more nests; these, however, contained all young in different stages of growth, some of them nearly large enough to leave the nest. Each of these contained but three young.

"In the spring of '77 I commenced my search on March 15th, and although I looked carefully and repeatedly over the entire ground gone over the year before, and over new localities as well, I failed to see a single bird where on the previous season they had been found comparatively plenty. Puzzled to account for their absence I looked around for the possible cause of it, and knowing that these birds live almost exclusively on the seeds of the pine (in fact, all the specimens I have ever dissected, shot mostly in the winter months, however, had their crops filled with these seeds and nothing else), I naturally first examined the trees for their principal food supply and found that not a tree in a hundred bore ripe cones, and although there were many green ones I found none mature. This fact, then, accounted fully and plainly for their absence. During the next winter, '77-78, I found a few of these birds occupying their old haunts again, but not nearly as many as in previous seasons, and I commenced my search as usual again in the latter part of March. On April 4, 1878, I found my first nest. It was placed near the extremity of a small limb, about forty feet from the ground, very hard to get at, and in trying to pull the limb down somewhat with a rope so that it could be reached from a lower limb it broke and the eggs were thrown out of the nest. This also contained three eggs, and incubation, at this early date even, was far advanced.

"On April 8th, '78, I found another nest containing two eggs with good-sized embryos. This was likewise placed in a pine tree and near the extremity of one of the limbs, about sixteen feet from the ground. The only way this nest could be got at was by leaning a pole against the limbs of the tree and climbing to the nest by it, in which, after a good deal of labor and trouble, I finally succeeded.

"The type specimens obtained by me measured respectively 1.22×0.95 inches and 1.20×0.90 inches. The ground color of these eggs is a light grayish green and they are irregularly spotted and blotched with a deeper shade of gray, principally about the larger end. On the smaller egg the spots are finer and more evenly distributed. The last two eggs obtained are somewhat larger, measuring 1.26×0.95 and 1.30×0.92 inches. Their markings although somewhat finer are about the same as in the type specimens. They are elongated, oval in shape and considerably pointed at the smaller end. The second set of eggs found by me, which, unfortunately, were broken, were more of a greenish ground color and also

much heavier spotted. There is no doubt that there will be considerable variation found when a number of sets of eggs of this bird are placed together for examination. That this species should only lay but three eggs to the set seems also rather strange, but as far as my personal observations go, such is the fact.

"The nests, although looking quite small when viewed from below, are rather bulky affairs after all when closely examined, their base consisting of a platform of small sticks and twigs, mostly of the white sage, which are laid on a sufficiently strong pine branch and generally as far out as possible. On this the nest proper is placed, which is composed of dry grasses, vegetable fibres, hypnum moss, and the fine inner bark of the western juniper (*Juniperus occidentalis*.) These various materials are well incorporated together and fastened to the branch and pine needles on which it is placed, and makes a warm and comfortable structure. The outer diameter of the only nest measured by me (that is, the compact portion of it) was eight and one-half inches; inner diameter, four and one-half inches; depth inside, three and one-half inches; outside, five inches. As a rule, the nests were well concealed from view below, and almost invariably placed on or near the extremity of a live limb at various heights from the ground.

"Isolated clumps of pine trees growing near the edges of the forests or mountain valleys, as well as among juniper or mountain mahogany groves, seemed to be the favorite localities frequented by these birds during the breeding season; in fact, I have scarcely ever noticed them any distance in the forest unless there were frequent openings, small valleys, etc., interspersed with timber. These birds appear to raise but one brood during the season, . . . and in the vicinity of Fort Harney they disappear about the end of May or early in June, gathering about that time in considerable flocks, and are not seen again till about October. They probably spend the summer months in the higher mountain regions in the vicinity.

"At all other times a social, inquisitive and exceedingly noisy bird, the Clarke's Crow during the breeding season is exactly the reverse. In vain one may watch and listen to hear their usual and by no means musical call note, "chaar, chaar," which so easily betrays their presence at other times. . . . Their whole character seems to have undergone a sudden radical transformation. They remain perfectly silent, seem to hide and would scarcely be noticed, even where comparatively abundant, unless closely looked after."

To this account I have little to add of interest. In the matter of food, Clarke's Crow, or Nutcracker, as now called, is omnivorous, certainly nothing at all eatable comes amiss. While during the winter months their food, perhaps from necessity, consists principally, if not altogether, of the seeds of various species of coniferous trees—the extracting of these entailing considerable strength and labor, but which is facilitated to a certain extent with

the help of their strong claws and sharp bill, admirably adapted to the purpose,—their bill of fare for the greater part of the year is quite varied, including berries of different species, insects of all kinds, as well as their larvæ, butterflies, which they catch very dexterously on the wing, and especially grasshoppers and the large, wingless, blackish brown crickets (*Anabus simplex*), which in some seasons are to be found overrunning large sections of country in countless numbers, devouring everything green and eatable in their way. These repulsive looking objects are in turn preyed on by numerous species of mammals, as well as birds and fishes, and even the Pah-Utes or Snakes, as well as the various tribes of Digger Indians inhabiting the Great Basin, consider these selfsame crickets quite a delicacy, and yearly gather large quantities of them, which, after being roasted and dried, are stored away in mats for winter use. I have more than once observed flocks of Clarke's Nutcrackers of considerable size scattered out over the sagebrush-covered mesas (table-lands) near the foothills of the Blue Mountains in Oregon, actively and industriously engaged in catching these crickets, and apparently enjoying them. At such times they are especially noisy, calling each other constantly, and having a jolly good time generally.

The stomachs of all the nestlings examined by me, however, contained only an oily cream-colored pasty mass, composed exclusively of the hulled seeds of the pine or other conifers, easily recognized by its not unpleasant odor, and this seems to be the only food they are fed with while in the nest.

Picicorvus columbianus, while occasionally rather tame and unsuspicious, and an inquisitive bird at all times, is usually shy and not easily approached within shooting distance. Now and then I have seen an individual, bolder than the rest, alight amongst my chickens in the backyard and feed with them, but such occurrences are rather rare and infrequent. In the summer they spend considerable of their time on the ground in search of food. To the hunters and trappers in Oregon the bird is known under various names, such as Meatbird, Moosebird, and Camp-robber, but the same names are equally applied to the Oregon Jay (*Perisoreus canadensis obscurus*), which has much the same habits. In winter the two species are often found associated together. At Fort Harney, Oregon, the breeding range of Clarke's Nutcracker extends as low down as 5200 feet altitude, and I am

satisfied that it breeds at about the same elevation in the vicinity of Fort Klamath, Oregon, where, however, these birds were rather scarce.

An abundant and suitable food supply has unquestionably a great deal to do with the movements of these birds, and while they might be called resident in most places where they are found, they, like many other species usually considered residents throughout the year, are more or less migratory. Their range northward is very extended, specimens having been obtained on the Putnam River, Alaska, close to the Arctic Circle and to the tree limit.

SUMMER BIRDS OF EASTLAND COUNTY, TEXAS.

BY E. M. HASBROUCK.

EASTLAND County, Texas, is situated between latitudes 32° - 33° and longitudes 98° - 99° or a little northeast of the geographical centre, and is known throughout the country as the poorest and most unattractive portion of the State. The elevation varies from twelve hundred to sixteen hundred feet, and the entire County, as well as a number of those lying to the east, is one series of terraces, beginning a little west of Cisco and extending through Erath and Bosque Counties, until the valley of the Brazos is reached. Water is extremely scarce and the timber, although pretty generally distributed, is almost entirely of oak, and comprises four species, known as post-oak, bur-oak, black jack, and 'shinnery.' This last is a short, stunted bush, frequently covering hundreds of acres and rarely exceeding four or five feet in height.

The observations recorded were made while accompanying the Geological Survey, and while this list of sixty species is by no means complete, still it will, I hope, be of some value in showing the partial distribution of certain peculiar and rare forms. Several species of Hawks, which were numerous, I was unable to secure and identify, as my time was not my own.

1. *Ardea herodias*. GREAT BLUE HERON. — Present, but rare from scarcity of water; two individuals seen. A number were observed on

Pecan Bayou near Brownwood in Brown County some sixty miles south, but this has a permanent flow of water the year round.

2. *Bartramia longicauda*. BARTRAMIAN SANDPIPER. — Common throughout the prairie and upland regions. Found singly or in flocks of a dozen or more. Their abundance was particularly noticeable at night when they could be heard calling to each other while flying overhead.

3. *Actitis macularia*. SPOTTED SANDPIPER. — As rare as *Ardea herodias*; but two observed on the tanks or cattle ponds.

4. *Ægialitis vocifera*. KILLDEER. — Extremely common, found throughout the country in flocks and particularly abundant near the tanks.

5. *Colinus virginianus texanus*. TEXAN BOB-WHITE. — One of the commonest of the birds; I have seldom seen Quail more plentiful or in larger flocks than through this section of country, and in this respect it is a perfect sportsman's paradise.

6. *Zenaidura macroura*. MOURNING DOVE. — The commonest of Texas birds; breeds everywhere.

7. *Cathartes aura*. TURKEY BUZZARD. — An extremely common resident, as it is throughout the southern and western part of the continent.

8. *Catharista atrata*. BLACK VULTURE. — Equally abundant with the preceding, and more so in certain localities, especially in the southern part of the County.

9. *Circus hudsonius*. MARSH HAWK. — Not common, a few seen at various localities throughout the County.

10. *Accipiter cooperi*. COOPER'S HAWK. — The rarest of the Hawks, only three noted during the trip.

11. *Buteo lineatus*. RED-SHOULDERED HAWK. — Fairly abundant, and distributed throughout the County.

12. *Buteo swainsoni*. SWAINSON'S HAWK. — Tolerably common, of a roving disposition, and like the foregoing, distributed throughout the County.

13. *Haliaeetus leucocephalus*. BALD EAGLE. — A single one was observed hovering around the Comanche Mountains near Rising Star on Nov. 11.

14. *Falco sparverius*. SPARROW HAWK. — The commonest of the Hawks, in fact I have never seen a locality where they are so numerous. Specimens collected appear much richer in color than those from more northern localities.

15. *Syrnium nebulosum*. BARRED OWL. — Common everywhere along the creeks and river bottoms, and occasionally found on the uplands.

16. *Megascops asio mcallii*. TEXAS SCREECH OWL. — Common everywhere, and as bold and daring as others of the genus. I remember one occasion when I had a fine string of Teal hanging in camp. I was awakened by the hooting of one of these birds on a limb directly over my head and but a few feet above me; securing him and returning to rest, I had no sooner rolled up in my blankets than his perch was taken by another which, it is needless to say, followed the fate of the first.

17. *Bubo virginianus subarcticus*. WESTERN HORNED OWL.—Common; their hootings may be heard regularly every night, and in some localities as many as a dozen or more are found together. Their notes are distinguishable at once from those of *Bubo virginianus* proper, and vary greatly in intensity of tone with individuals.

18. *Geococcyx californianus*. ROAD-RUNNER.—This bird, while tolerably abundant in adjacent Counties and even common in some, is quite rare here, owing to the unfitness of the country for them. Not over a dozen were seen, and but three secured.

19. *Coccyzus americanus*. YELLOW-BILLED CUCKOO.—Fairly abundant, the 'natives' calling it 'Rain Crow,' and asserting that it is an infallible foreteller of approaching storms.

20. *Ceryle alcyon*. KINGFISHER.—A few individuals seen, but as rare as the water upon which they depend for their food supply.

21. *Dryobates villosus*. HAIRY WOODPECKER.—Common, and usually found in company with any of the following Woodpeckers.

22. *Dryobates pubescens*. DOWNY WOODPECKER.—Tolerably common; generally found in company with *scalaris*.

23. *Dryobates scalaris*. TEXAN WOODPECKER.—This handsome little Woodpecker is abundantly distributed throughout the whole of central Texas; I have found it common in over a dozen Counties.

24. *Ceophloeus pileatus*. PILEATED WOODPECKER.—This species is fairly abundant throughout the various Counties of central and western Texas that I have visited; they seldom visit the dry upland, regions although they at times do so, preferring the more densely wooded bottom lands of the Leon and Satana Rivers.

25. *Melanerpes erythrocephalus*. RED-HEADED WOODPECKER.—Abundant throughout this and adjacent Counties.

26. *Melanerpes carolinus*. RED-BELLIED WOODPECKER.—More common if anything than the preceding. Specimens from this particular locality appear smaller and less richly colored than those from the eastern United States.

27. *Melanerpes aurifrons*. GOLDEN-FRONTED WOODPECKER.—A bird of strictly local occurrence. In the single locality in Eastland County where they are found, they may be said to be fairly common, but outside of an area of twenty-five square miles they are unknown in the County. This particular region begins at a place known as Merrill's on the Cisco and Brownwood road ten miles south of Cisco, and runs in a northeasterly direction to the Carbon and Rising Star road, a distance of about six miles, then follows this with comparative closeness for about five miles, then back to Merrill's, forming an irregularly triangular tract of country. The statement that they are not found outside of this district may at first appear strange, but when I state that I have surveyed entirely around it, and through it in several directions, it is evident that I have substantial reasons for the assertion. This section of country certainly presents peculiar characteristics; the timber is entirely of post-oak, and the ground more or less thickly covered with 'shinnery,' and differs from the surrounding

country in that the tops of the trees were affected some years ago with a blight, and now this entire area is one mass of dead-topped trees, and this is what apparently suits the present species. They have a peculiar habit of perching for many minutes in these tops, silent and motionless, that at once distinguishes them from their near relative *M. carolinus*, and although the two are frequently found together in the same tree, a little practice will suffice to separate them at a glance. Their note is peculiar, combining the 'chirp, chirp' of *carolinus* with a certain shrillness and accent of their own, while the call note, either flying or at rest, is similar to that of *M. erythrocephalus* and at the same time not unlike that of *Colaptes auratus*. While their notes once learned are readily recognized, still it takes not a little practice to distinguish between a Red-head in one tree and the Golden-front in the next, or between a Golden-front and a Flicker when both are on the opposite side of a ravine and hidden from view; and I have more than once shot *carolinus* even when morally certain it was what I wanted. The range of this bird is given as "Valley of the Lower Rio Grande, eastern Mexico and southern Texas"; I therefore have the pleasure of extending its range some hundreds of miles.

28. *Colaptes auratus*. FLICKER. — Common everywhere, and almost invariably found in company with the following.

29. *Colaptes cafer*. RED-SHAFTED FLICKER. — Common but extremely shy. Among those taken was one of that peculiar form described some years ago as *hybridus* (now ignored), combining the characters of both species.

30. *Phalaenoptilus nuttalli nuditus*. HOARY POOR-WILL. — Central Texas may be truly said to be the home of this bird; I doubt if any of this family are more abundant in any locality. Although seldom seen by daylight unless flushed from their retreat, no sooner does darkness settle down than hundreds may be heard calling from every direction. Their notes when heard from a distance are a plain, 'poorwill, poorwill,' but on close approach are as plainly tri-syllabic as those of the male Quail in spring, and are a perfect 'Will-whip-er-will-whip-er,' with a slight pause after the 'will,' which also bears the accent, and with the final syllable just audible.

31. *Chordeiles virginianus henryi*. WESTERN NIGHTHAWK. — Very common throughout the central part of the State, and on the prairies at dusk dozens may be seen skimming over the ground in pursuit of moths.

32. *Milvulus forficatus*. SCISSOR-TAILED FLYCATCHER. — Extremely abundant; found everywhere, more especially on the mezquite prairies and around the clearings of the settlers. Breeds everywhere and as conspicuously as does our Kingbird.

33. *Contopus richardsoni*. WESTERN WOOD PEWEE. — Rare; more abundant further south in Brown and Lampasas Counties.

34. *Empidonax flaviventris*. YELLOW-BELLIED FLYCATCHER. — But one observed; taken in the Leon River bottom Sept. 4, 1888.

35. *Cyanocitta cristata*. BLUE JAY. — Extremely rare; but two observed.

36. *Corvus americanus*. COMMON CROW. — Abundant. Specimens taken are much smaller than those from the East.

37. *Icterus galbula*. BALTIMORE ORIOLE. — Rare; but four specimens observed.

38. *Chondestes grammacus strigatus*. WESTERN LARK SPARROW. — Extremely common everywhere in flocks of from a dozen to fifty.

39. *Amphispiza bilineata*. BLACK-THROATED SPARROW. — I saw these birds but once and then only a small company of perhaps fifty individuals on a chaparral hill. They were extremely shy and it was with difficulty I was able to secure some.

40. *Peucæa cassini*. CASSIN'S SPARROW. — Rare; but two specimens taken, on Sept. 3 and 4, respectively.

41. *Melospiza fasciata montana*. MOUNTAIN SONG SPARROW. — Rare in some localities, but extremely common in others, especially along the water courses.

42. *Cardinalis cardinalis*. CARDINAL. — Common everywhere throughout the country in the vicinity of water.

43. *Passerina ciris*. PAINTED BUNTING. — Very rare; not more than half a dozen observed.

44. *Spiza americana*. DICKCISSEL. — One specimen taken Sept. 3, 1888.

45. *Piranga rubra*. SUMMER TANAGER. — Fairly abundant along the water courses, not observed elsewhere.

46. *Lanius ludovicianus excubitorides*. WHITE-RUMPED SHRIKE. — Abundant throughout this and adjacent Counties.

47. *Vireo bellii*. BELL'S VIREO. — Common along the streams, unknown on the uplands.

48. *Dendroica æstiva*. YELLOW WARBLER. — Not common; some half dozen were observed during the latter part of August and first of September.

49. *Anthus pensilvanicus*. AMERICAN TITLARK. — Common throughout the prairie regions and frequently seen in the clearings.

50. *Mimus polyglottos*. MOCKINGBIRD. — Fairly abundant and pretty generally distributed.

51. *Catherpes mexicanus conspersus*. CANON WREN. — I have not found this bird in Eastland County, but further east and in nearly the same latitude I found a number of them in 1887 at Meridian in Bosque County, at the 'Bee rocks.'*

52. *Thryothorus ludovicianus*. CAROLINA WREN. — Tolerably common along the water courses, especially the Leon and Satana Rivers, Copperas, Rush, and Palo Pinto Creeks.

53. *Thryothorus bewickii bairdi*. BAIRD'S WREN. — Very abundant throughout the County; I was extremely surprised to hear them frequently sing very similarly to some of our Warblers, and often searched diligently for a Warbler before discovering the author of the song. It was such a

*See 'Scientific American,' April 28, 1888, p. 263.

strange departure from the general run of Wren songs that it was not until I had been repeatedly fooled that I finally accepted it as a case of 'truth stranger than fiction.'

54. *Certhia familiaris americana*. BROWN CREEPER. — A single individual observed at Cisco.

55. *Sitta carolinensis*. WHITE-BELLIED NUTHATCH. — Fairly abundant everywhere.

56. *Parus atricristatus*. BLACK-CRESTED TITMOUSE. — Extremely common throughout the County; not distinguishable by note or habits from *bicolor*, but conspicuous for the black crest plainly visible when close by.

57. *Parus carolinensis agilis*. PLUMBEOUS TITMOUSE. — It was with pleasure that I found Mr. Sennett's variety in this locality and fairly common. Those mentioned by him from southwestern Texas were taken some distance from this locality, thus giving me the pleasure of extending its range some distance north and east.

58. *Poliophtila cærulea*. BLUE-GRAY GNATCATCHER. — Rare. A few observed along the Leon and Satana Rivers.

59. *Sialia sialis*. BLUEBIRD. — One of the commonest of Texas birds, seen everywhere.

A BIRD WAVE.

BY PHILIP COX.

EARLY one morning in April, 1885, I started from Newcastle, New Brunswick, for a day's duck shooting on the Miramichi River, which was then free of ice. Snow was falling when I left my house, the tumbling flakes forming a strange contrast with the blossoms, bursting buds, and catkins of the trees and shrubs. Presently birds were seen flying eastward, and upon looking upward, through the snow, which was by this time falling thick and fast, I saw hundreds of Robins (*Merula migratoria*), Song Sparrows (*Melospiza fasciata*), and Juncos (*Junco hyemalis*) mingled together in an unbroken column and passing noiselessly on. Some of the birds were only a few feet above the tops of the tallest trees, while others were higher up, the column extending so far skyward that the topmost line could with difficulty be outlined amid the falling flakes. The width of the column—from flank to flank—appeared to average about twenty-five yards.

Outside of these flanks few birds were to be seen — either toward the centre of the river, or over the meadow through which I was walking; the bulk were massed in this narrow column and kept directly over the margin of the shore, apparently guided by the line of strong contrast between the whitened meadow and the dark waters of the river. They moved on in perfect silence, save for the flutter of the myriad wings, —not a note was heard from them. Their flight was slow and suggested weariness, but they displayed no inclination to rest, though the tree-tops were thrust so temptingly toward them. However, in about half an hour from the time when they were first observed some individuals showed a disposition to halt. An occasional Song Sparrow or Junco would alight on the top of a tall tree, and after remaining at rest for a few seconds — never longer than half a minute — would grow uneasy and utter a rather faint cry or chirp. This call would be answered by one or more of those on the wing, and then the loiterer would rise and join them.

The storm increasing, I abandoned the idea of looking for Ducks that day, and seeking the refuge of an adjacent house, for more than two hours I watched this bird wave as it rolled along. There was no gap, no cessation, neither was there deviation from the line of the river bank. As the time passed the smaller birds displayed evidence of growing more and more weary. Increased numbers alighted, and these took longer rests, and made more energetic demands for a general halt. About eight o'clock, and as if by the command of a leader, or by magic, the moving host vanished.

Previous to this morning only an occasional early bird of these spring migrants had been observed, but now as I returned homeward I found every bush and fence swarming with birds. As snow had fallen to the depth of some four or five inches, little food could be obtained, and by noon great flocks had gathered in the farmyards, and that afternoon many a kind hand strewed crumbs and seeds upon the snow for these little friends — heralds of warm days and smiling fields.

How was this wave formed? What brought this throng of birds together? I cannot think that they had wintered within a limited area and begun the movement northward at the same hour. I am inclined to the opinion that such flocks are comparatively small at the start, and increase by attracting similar small com-

panies as they move along. Often, in the early spring, I hear on soft mild evenings, faint bird calls from the sky, which are answered from bush and tree, and these, in my opinion, are the trumpeters who call together the winged armies of the air.

ON THE SPECIFIC IDENTITY OF *BUTEO BRACHYURUS* AND *BUTEO FULIGINOSUS*, WITH
ADDITIONAL RECORDS OF THEIR
OCCURRENCE IN FLORIDA.

BY W. E. D. SCOTT.

ON the 16th of March, 1889, near Tarpon Springs, I found a pair of Hawks just starting to build a nest. The locality was on the edge of a 'hammock,' and the nest, the foundation of which was finished, was in a gum tree some forty feet from the ground. *Both* birds were seen in the act of placing additional material on the structure. As the birds were rare, and I could not risk their being killed or driven away, with the aid of a native hunter both were secured, though before killing them I was certain of their identity.

The female, No. 6392 of my collection, is *Buteo brachyurus* and the male, No. 6391, is a typical example in very fine, full plumage of what has heretofore been called *Buteo fuliginosus*. Therefore the *Buteo fuliginosus* of Sclater must henceforth be considered as a synonym of *Buteo brachyurus* of Vieillot.

It seems probable that the *adult* birds vary in color with sex, and that the bird known as *B. brachyurus* is the female, and that called *B. fuliginosus* the male. I am further convinced of this by several facts that have come under my observation. Since killing the pair of birds spoken of, I have seen *two fuliginosus* accompanying a *brachyurus* and going through all the manœuvres peculiar to the pairing season. Again, Mr. J. W. Atkins, writing me in regard to some birds he kindly secured for me from A. Lechevallier, says: "Unfortunately there is but *one fuliginosus* in the box. . . . The box also contains a Hawk that Lechevallier shot *in company* with a *black hawk*, and be-

lieves it to be a *young female* of that species." This was written to me *before* I secured the pair mated and building, and neither Mr. Atkins nor Lechevallier know up to this time, April 22, of my observations of March 16.

The bird alluded to by Mr. Atkins is before me. It is 3216 of my collection, and has been examined by Mr. J. A. Allen, who pronounces it *Buteo brachyurus*. It was taken, as before stated, by A. Lechevallier at Chatham Bay, Florida, November 12, 1888, in company with a *black hawk*, presumably what has been called *Buteo fuliginosus*, though I have not seen the bird. I have also before me three examples from Florida, that have not yet been recorded, of the so-called *Buteo fuliginosus*. No. 3215 is a male, young of the year, and was taken at Miami, Florida, on October 11, 1883, by A. Lechevallier. No. 3225 is an adult male taken on February 2, 1889, at Chatham Bay, Florida, by the same collector. No. 3228 is without a sex mark, but is evidently a young bird of the year, and was taken near the source of the Caloosahatchie River by Mr. J. F. Menge, of Fort Myers, Florida. In *size* and *color* No. 3228 exactly corresponds with No. 3215, a male, young of the year. Therefore I am inclined to believe that the color of the adult birds will be found to be correlated with the sex. I wish to express to Mr. J. W. Atkins, of Key West, my thanks for his kindness in procuring me five of the seven *Buteo brachyurus* that have come into my possession.

The observation already recorded in 'The Auk,' Vol. V, p. 185, and other records here given, lead to the conclusion that this species is of regular occurrence on the Gulf coast of Florida at least as far north as the vicinity of Tarpon Springs, and that it breeds regularly though rarely in this region, there can be no doubt. The birds that have been met with in the immediate vicinity of Tarpon Springs have usually been seen in pairs, and once three were observed together. During March and April, 1888, within a radius of ten miles of the town in question, there were observed by me, on March 17 a single bird, on April 6 a pair, on April 10 a pair, these last two pairs probably the same individuals. On two other days in late March and April, and several times in May, 1888, I saw pairs of Hawks that were certainly the birds in question. They were always very shy and wary, and difficult to approach in any way. About two hundred yards in the open

was as near as one could generally approach. They frequented the vicinity of hammocks, and their habits, except the extreme shyness, appeared much like those of the common Red-shouldered Hawk of this region. The female, No. 6392, of the pair spoken of as beginning to build had eggs with the yolks almost developed, and would have laid within a week. From the appearance of the ovary and oviduct I believe that three eggs would have been laid.

A SUMMARY OF OBSERVATIONS ON THE BIRDS OF THE GULF COAST OF FLORIDA.

BY W. E. D. SCOTT.

(Continued from p. 160.)

Colinus virginianus floridanus. FLORIDA BOB-WHITE. — This species is abundant in the vicinity of Tarpon Springs, and breeds in numbers in early April. At least two broods are raised, for I have found birds but a few days old in the first week of July. As to the affinity of the form here with true *cubanensis* I quote from a recent letter received from Mr. J. A. Allen who kindly examined, at my request, a large series of the Quails from the vicinity of Tarpon Springs. He says: "None of the Quails very nearly approach *C. v. cubanensis*, which has the black extending more or less irregularly over the whole breast and onto the upper abdomen, and much chestnut on the flanks, and the bill rather small. The black is not so much confined to a well defined jugular band as in your specimens. The females are also quite different from any in your lot. Your birds seem to be all extreme (typical) *floridanus*, except the two females, 3226 and 3227, which lean a little toward *virginianus*, as do other East Coast specimens I have seen."

The two females referred to by Mr. Allen are from Miami, Florida, and all the rest of the series, some forty in number, are from the vicinity of Tarpon Springs.

Mr. Atkins says that the birds were only occasional in the immediate vicinity of Punta Rassa though abundant a few miles back in the country.

Colinus virginianus cubanensis. CUBAN BOB-WHITE. — Mr. Atkins procured a Quail, the only one he has taken so far on the Island of Key West, on July 5, 1888. It is very different from any of the Quails already noticed from about Tarpon Springs, and can only be referred to this subspecies. It is an adult male, and is No. 6086 of my collection. My

thanks are due to Mr. Atkins for kindly sending me the bird in question. Mr. Atkins further remarks that Quail seem almost unknown to the inhabitants of Key West and that the only additional records he has made there, are "one seen and another heard on May 11, 1888. One seen on May 22, 1888."

Meleagris gallopavo. WILD TURKEY.—This species is still common at most points on the Gulf coast, and is to be seen frequently in the markets of the towns. The breeding season begins about the last week in February, and but one brood seems to be reared.

Columba leucocephala. WHITE-CROWNED PIGEON.—A regular summer resident at Key West and vicinity, and Mr. Atkins also took it on one occasion at Punta Rassa (see Auk, Vol. V, p. 185). Though a regular summer resident it seems not at all common at Key West, though quite abundant on neighboring keys in July, August, and September. Mr. Atkins says that they arrive at Key West from May 1 to 15, and remain till November.

Zenaidura macroura. MOURNING DOVE.—Abundant resident, and breeds throughout the area under consideration. Mr. Atkins has observed it throughout the summer, though rarely, at Key West.

Columbigallina passerina. GROUND DOVE.—Common resident and breeds at all points on the Gulf coast where observations have been made. Also resident at Key West and breeds in numbers (J. W. Atkins).

Melopelia leucoptera. WHITE-WINGED DOVE.—Casual or accidental at Key West. One taken at Key West November 14, 1888, by Mr. J. W. Atkins (see Auk, Vol. VI, April, 1889, p. 160).

Geotrygon montana. RUDDY QUAIL-DOVE.—Apparently accidental at Key West. One taken by a gunner at Key West December 8, 1888—J. W. Atkins (see Auk, Vol. VI, April, 1889, pp. 160, 161).

Geotrygon martinica. KEY WEST QUAIL-DOVE.—This species must be of rare occurrence on the island of Key West, for during the two years Mr. Atkins has spent at that point the bird in question has not come under his observation.

Cathartes aura. TURKEY VULTURE.—Common resident. Breeds.

Catharista atrata. BLACK VULTURE.—Equally common with the last. Breeds. In early March, 1876, in Sumpter County, I found this species breeding. The young in this case were already several days old. They were two in number, which, I believe, is the regular complement. The nest, if such it may be called, was only a slight depression in the ground, the location being surrounded by a heavy growth of 'saw palmettos.'

Elanoides forficatus. SWALLOW-TAILED KITE.—A common migrant and summer resident in favorable localities. These are hammocks, particularly such as are in the vicinity of streams. I have never observed the birds in winter about Tarpon Springs, but they appear early in March and remain, though they are not common just here, till October. They breed in this vicinity early in April. Mr. Atkins has observed the species at Punta Rassa, August 25, 1886, and also at Key West, August 20, 1888. He says further in regard to the birds, "I have another taken by Lechevallier near Miami, where he found it breeding and took eggs."

Ictinia mississippiensis. MISSISSIPPI KITE.—The only point where I have observed this species is at Panasoffkee Lake, in Sumpter County. Here I saw three during January and February, 1876.

Elanus leucurus. WHITE-TAILED KITE.—I have not met with this species though it is of regular, but, I believe, rare occurrence in south-west Florida. A single specimen, 3218 of my collection, is before me. It is a male, and was taken by A. Lechevallier in the region below Cape Romano. Mr. Atkins has observed the species on Sanibel Island in winter.

Rostrhamus sociabilis. EVERGLADE KITE.—For remarks on this species previously published by me, see 'Bulletin Nuttall Ornithological Club', Vol. VI, January, 1881, pp. 14-21. At Panasoffkee Lake the birds were migrants, but at points south of Tampa Bay where they occur they are resident. At Panasoffkee Lake they bred in numbers in April.

Circus hudsonius. MARSH HAWK.—Common migrant and winter resident. I have no records of it in this region in summer, that is from May 1 till September. I have met with the adult male but twice in Florida, though the birds are abundant on the salt marshes of the Gulf coast. Mr. Atkins finds it in winter at both Punta Rassa and Key West. At both places it is common.

Accipiter velox. SHARP-SHINNED HAWK.—A regular though not common migrant and winter resident. I have no records of it in summer. Mr. Atkins obtained the species at Punta Rassa, where he regarded it as a rare migrant, but has not found it at Key West.

Accipiter cooperi. COOPER'S HAWK.—A casual visitor to the Gulf coast. During my observations here I have met with it but twice. Mr. Atkins took one at Punta Rassa in August in "very fine plumage." "Not noted at Key West."

Buteo borealis. RED-TAILED HAWK.—A rather rare winter visitor on the Gulf coast, and a rare resident in the region about Tarpon Springs throughout the year. It probably breeds in this vicinity, as a pair was observed on many occasions during the entire year of 1886.

Buteo lineatus. RED-SHOULDERED HAWK.—A common species and breeds. From a series of Red-shouldered Hawks, all adults, fourteen in number, four are typical, true *lineatus*. They are Nos. 5644, ♀, 5647, ♂, 5649, ♀, 6141, ♂, of my collection. All were taken at Tarpon Springs. In the series in question are three birds that are fairly intermediate between *B. lineatus* and *B. lineatus alleni*. They are Nos. 5817, ♀, 6022, ♀, and 5648, ♂.

Buteo lineatus alleni. FLORIDA RED-SHOULDERED HAWK.—This form is on the whole more common than the typical *lineatus* in the vicinity of Tarpon Springs. In the series of fourteen adult birds in my collection, seven, or half of the number are good examples of the pale form. These are Nos. 4350, ♀, 5312, ♂, 5646, ♂, 5640, ♀, 5645, ♂, 6075, ♂. The series of adult birds is further supplemented by a series of twelve birds in the gray or immature plumage, and the same relative proportion in distribution between the two forms seems to hold good here.

Buteo latissimus. BROAD-WINGED HAWK.—I have not met with this species in Florida, but Mr. Atkins took a single one at Key West on February 3, 1888. At the same place, on October 21, 1887, he saw "a large flock of Hawks, one hundred and fifty or more, which were mainly this species."

Buteo brachyurus. SHORT-TAILED HAWK.—A rather rare migrant and summer resident, breeding, in southern and southwestern Florida and coming regularly as far north at least as Tarpon Springs on the Gulf coast. For a detailed account see this number of 'The Auk,' p. 243.

Haliaeetus leucocephalus. BALD EAGLE.—A common resident on the Gulf coast of Florida. Breeds in numbers. The old nests are repaired in the vicinity of Tarpon Springs in November; the eggs, generally two in number, are laid by the 10th or 15th of December, and by the middle of February the young are about ready to fly. But one brood is reared, varying from one to three young.

Mr. Atkins finds the Bald Eagle breeding both at Punta Rassa and at Key West, but remarks that at Punta Rassa "they disappear for a time, if not for the entire summer."

Falco peregrinus anatum. DUCK HAWK.—A rather rare winter visitor on the Gulf coast of Florida. Observed all winter (1875-1876) at Panasoffkee Lake, and regularly every winter that I have been at Tarpon Springs. Mr. Atkins has taken the species at Punta Rassa in fall and spring and has observed it at Key West in fall and winter. It arrives at Key West about October 1.

Falco columbarius. PIGEON HAWK.—For records of the occurrence of this species I am indebted to Mr. J. W. Atkins, who took it at Punta Rassa on September 26 and October 5, 1886, and also at Key West on October 16 and 18, 1888. I met with it rather rarely at Panasoffkee Lake during the winter of 1875-76, but have no records from the immediate vicinity of Tarpon Springs.

Falco sparverius. SPARROW HAWK.—Common resident. Breeds in the vicinity of Tarpon Springs in early April. Mr. Atkins says that though he has taken them at Punta Rassa in July, none remain at Key West in summer. The first noted to arrive at that island in the fall of 1888 was on September 30.

Pandion haliaetus carolinensis. AMERICAN OSPREY.—Common resident. Breeds in January and February, according to locality. Mr. Atkins found this a common species at both Punta Rassa and Key West. He says: "I have a set of eggs from Marques Key, taken in November, 1887." Like the Eagle, the Fish-hawk did not remain in the vicinity of Punta Rassa in summer.

Strix pratincola. BARN OWL.—A rare resident. Probably breeds.

Syrnium nebulosum alleni. FLORIDA BARRED OWL.—Common resident. Breeds in the vicinity of Tarpon Springs in March. Mr. Atkins has seen this species at Sanibel Island in winter and has also records of them from Marco.

Megascops asio floridanus. FLORIDA SCREECH OWL. — Common in suitable localities, and resident. Breeds in March and April.

Bubo virginianus. GREAT HORNED OWL. — Not as common as the last two, but still a characteristic bird of the region under consideration. The time of breeding at Tarpon Springs and at Princeton, New Jersey, does not vary greatly. February finds the species with eggs at the latter place, though there is often snow on the ground, and the same month the eggs are laid about Tarpon Springs, though the climatic conditions are so very widely different.

Speotyto cunicularia floridana. FLORIDA BURROWING OWL. — At certain points in the interior in De Soto and adjacent Counties this species is resident and not uncommon. I have a series of thirteen birds before me that were taken in March, 1888, at Indian Prairie, De Soto County, Florida. They show little or no individual variation.

Mr. Atkins observed all the Owls I have mentioned near Punta Rassa, but has no record of the occurrence of any kind of Owl on the island of Key West.

Conurus carolinensis. CAROLINA PAROQUET.—With the settlement of the State this species has gradually disappeared till at the present time it must be regarded as a rare bird, though once so abundant and conspicuous. In the winter of 1875 and 1876 the birds were very abundant at Panassoffkee Lake, and the same season I saw many flocks on the Ocklawaha River. About Tarpon Springs they were formerly very common, and were looked upon by the few settlers as a decided enemy to the various fruit crops cultivated. They were wantonly mischievous and cut hundreds of young *green oranges*, peaches, and the like, from the trees almost as soon as the fruit was formed. This was up to within the last seven years. They were killed in great numbers while committing such depredations, being fearless and coming in large flocks. For the past five years but one small flock of some ten birds has been seen in this vicinity, and they were simply passing over and did not alight. No doubt the great number of these birds that have been killed in order to protect the fruit crops is a large factor in accounting for their disappearance, but it can hardly be regarded as the sole agent in the result that has been attained in most localities. The Paroquet seems to be one of the species that, like the Ivory-billed Woodpecker and others, disappears from settled regions, and it would seem to be a question of only a few years when Paroquets will be as unknown in most parts of Florida as they are in some of the States where the early settlers found them an abundant species.

At a point in Hernando County, in the vicinity of a place called Linden, the birds are still fairly common, and I have procured a series from that place this past winter (1888-1889). The ovaries of the female birds, taken about the middle of February, seemed to indicate that the breeding season would begin not later than the last of April. Mr. Atkins writes me, "I have no personal records of the occurrence of this species, but I have in my collection several specimens, and have seen others from

time to time that were taken in the Okeechobee region where the birds seem to be fairly common.

Coccyzus minor. MANGROVE CUCKOO.—That there are two forms of Mangrove Cuckoos occurring on the Gulf coast of Florida is apparent even from the limited amount of material that has come under my immediate observation. These birds are five in number, two of which were taken on the mainland; No. 3790 at Tampa, Florida, by Mr. Stewart, and No. 5465 at Punta Rassa, Florida, by Mr. J. W. Atkins. These two birds, as well as the others, I have submitted to Mr. J. A. Allen for comparison with the material in the American Museum at New York. He says: "Nos. 3790 and 5465 may be referred to *C. minor* proper, though much paler than *C. minor* from St. Vincents, Guadaloupe, Porto Rico, and Dominica; on the other hand, they just match specimens of *C. minor* from St. Thomas and Santo Domingo. Probably the West Indian *C. minor* runs into several races, your Florida examples being referable to those from the Larger Antilles, while those from the Lesser Antilles are not only *much* more deeply colored, but are larger birds. There is much more difference between specimens from Guadaloupe and St. Thomas than between your Florida examples and the St. Thomas specimens." I believe, from data accumulated during my researches on the Gulf coast of Florida, that *C. minor* will be found to be a regular migrant and summer resident almost as far north as Tarpon Springs, and that the species breeds on the mangrove keys off the coast in limited numbers. These birds are restricted to such localities in the breeding season almost in the same way as is the Black-whiskered Vireo, but are not nearly as common as that species.

Coccyzus minor maynardi. MAYNARD'S CUCKOO.—Through the kindness of Mr. J. W. Atkins of Key West, I have before me three examples of this subspecies, taken on the island of Key West. These birds, Nos. 5466, 5467, and 5468 of my collection, have been submitted for examination to Mr. J. A. Allen, and he agrees with me in referring them to this form. Mr. Atkins tells me by letter that "these Cuckoos are rather rare here (Key West) but I have good evidence that a few at least breed here in late May and during the month of June."

Coccyzus americanus. YELLOW-BILLED CUCKOO.—A common migrant and summer resident, breeding in numbers on the Gulf coast of Florida. They also breed commonly at Key West, Mr. Atkins tells me, and I have young birds collected by him there. Comparison of a large series of these birds with the same species taken in New York and Pennsylvania, shows no appreciable difference between birds from the several localities.

Coccyzus erythrophthalmus. BLACK-BILLED CUCKOO.—I have not met with this species in the areas visited, and am indebted to Mr. Atkins for the record of three individuals "taken at Key West in the fall," which is the only point where he has met with the Black-billed Cuckoo in Florida.

Ceryle alcyon. BELTED KINGFISHER.—A common winter resident, and some breed, in the region about Tarpon Springs. Mr. Atkins says

"This is a common winter resident both at Punta Rassa and Key West. Last spring note at Key West, May 22, 1888, and not seen again till August 30, 1888."

Campephilus principalis. IVORY-BILLED WOODPECKER.—For remarks on this species the reader is referred to 'The Auk,' Vol. V, No. 2, April, 1888, p. 186. Mr. Atkins regards it as rare in the vicinity of Punta Rassa, and has not observed it at Key West.

Dryobates villosus audubonii. SOUTHERN HAIRY WOODPECKER.—A not very common resident in the region about Tarpon Springs, where the breeding season is in April. Not noted by Mr. Atkins at either Punta Rassa or Key West.

Dryobates pubescens. DOWNY WOODPECKER.—Rather more common than the last, and breeding at about the same season. Observed by Mr. Atkins at Punta Rassa as a resident species, though rare, and not seen by him at Key West.

Dryobates borealis. RED-CKADED WOODPECKER.—Common resident. Breeds in the vicinity of Tarpon Springs in April. This species seems to be confined to the pine woods, and I cannot recall an instance of meeting with it in the hammocks of the Gulf coast. Not observed by Mr. Atkins at either Punta Rassa or at Key West.

Sphyrapicus varius. YELLOW-BELLIED WOODPECKER.—A not common winter visitor on the Gulf coast, where I have met with it as far south as Clearwater Harbor. The birds remain in the vicinity of Tarpon Springs as late as the last week in March.

Mr. Atkins says the Yellow-bellied Woodpecker is rather common at Punta Rassa and at Key West during the migrations. First one noted at Punta Rassa April 6, 1886. Returning, it arrives at Key West early in September, and can be found now and then throughout the winter. "Key West, April 1, 1889. First northward flight of year."

Ceophlæus pileatus. PILEATED WOODPECKER.—Common resident. Breeds late in March and early in April in the vicinity of Tarpon Springs. Observed by Mr. Atkins at Punta Rassa, but not at Key West.

Melanerpes erythrocephalus. RED-HEADED WOODPECKER.—In certain regions of the Gulf coast this species is a rather common resident, and in others it is almost unknown. For instance, at Tarpon Springs I have never met with it, but at a point seven miles north of that place and about a mile inland from the Gulf, there is a region of pine woods of perhaps five hundred acres in extent, where the Red-headed Woodpeckers are a conspicuous element of the bird life the year round. Mr. Atkins has not observed the Red-headed Woodpecker either at Punta Rassa or on the Island of Key West.

Melanerpes carolinus. RED-BELLIED WOODPECKER.—Common resident. Though it is met with everywhere, the hammocks seem to be preferred to the pine regions by this bird. Breeds in April and May in the vicinity of Tarpon Springs. Mr. Atkins found this species a common resident at Punta Rassa, and resident, but not nearly so numerous, at Key West.

Colaptes auratus. FLICKER. — Common resident, but rather more abundant in December, January and February than at other seasons.

"Common in winter at Punta Rassa; not observed there in summer. Rather rare at Key West, where it has only been met with in the fall."—J. W. Atkins.

Antrostomus carolinensis. CHUCK-WILL'S-WIDOW. — Resident on the Gulf coast at least as far north as Tarpon Springs, where in winter, December and January, they are rather rarer than at other seasons of the year. There the birds begin to sing in February, but are not in full song as a general thing till the first week in March. The mating season seems to continue through this month, and the eggs are not laid till the middle or last of April, or even later. The period of song continues till late in July, when it ceases and the birds are silent till the beginning of the following breeding season.

Mr. Atkins says: "Arrives at Punta Rassa in early April, after which their notes are heard on all sides. May 6, found a nest with two eggs on the bare ground in a swamp. The incubation about half completed. Last birds observed at Punta Rassa October 30. At Key West, noted first on March 3, and on the southern migration is very common from August 28 to September 18. Have yet to hear their notes here."

Chordeiles virginianus chapmani. CHAPMAN'S NIGHTHAWK. — For remarks on the breeding of this form see 'The Auk,' Vol. V, p. 186. The birds, as far as I am aware, are migrants and summer residents on the Gulf coast of Florida. In the vicinity of Tarpon Springs they arrive about the middle of April and in a few days become very abundant. They breed here in numbers, and become particularly abundant in late August and September, remaining till late in October and rarely into November. Observed by Mr. Atkins at Punta Rassa and at Key West, at both places as a common migrant and summer resident.

Chætura pelagica. CHIMNEY SWIFT. — Common migrant and summer resident, and very rarely observed during the colder months. Near Tarpon Springs the birds regularly arrive from the south late in April (24-30), and become abundant in a few days. Most of them pass on to the north after a short interval, but many remain to breed in the immediate vicinity.

Trochilus colubris. RUBY-THROATED HUMMINGBIRD. — Common spring and fall migrant, and a rare summer resident. About Tarpon Springs the birds appear late in February or early in March, according to the season, and for a month or six weeks are very common, after which time they disappear. The only records I have of the species in summer, near here, is of one seen July 10, 1888, and another August 4 of the same year.

Of the Ruby-throated Hummingbird Mr. Atkins says: "It is very common at Punta Rassa in winter, arriving early in September. By the middle of April all have departed. At Key West it is fairly common in winter. Last noted in spring, April 10.

(To be continued.)

AN UNDESCRIBED SUBSPECIES OF *DRYOBATES*
PUBESCENS.

BY C. F. BATCHELDER.

SOME Downy Woodpeckers I examined last autumn showed such marked differences between birds from different parts of the western United States that I have since then gathered together considerable material in order to find out what this geographical variation amounts to. I have been enabled, by the kindness of Messrs. Brewster, Ridgway, Jeffries, and other friends, to examine, in addition to my own series, a large number of specimens from various localities in the West, amounting altogether to ninety-five, besides nearly as many more Eastern skins.

These show plainly that the birds inhabiting the Rocky Mountains are of a race very different from true *gairdnerii*, which was originally described by Audubon from the Columbia River, and which in its typical form seems to be confined to the coast region of Oregon, Washington Territory, British Columbia, and possibly southern Alaska. I have concluded, therefore, to describe the former subspecies under the name of

***Dryobates pubescens oreæcus*,* subsp. nov.**

SUBSP. CHAR. — Similar to *D. p. gairdnerii*, but with the underparts pure white instead of light smoky brown, the white areas generally more extended, the under tail-coverts immaculate instead of being spotted or barred with black, the size somewhat greater except the feet which are relatively smaller.

Adult male (Type, No. 196, collection of C. F. Batchelder. Las Vegas Hot Springs, New Mexico, Dec. 18, 1882, C. F. Batchelder). Above black; nasal feathers whitish, sparingly mixed and tipped with black; two white stripes on each side of head; a scarlet nuchal band; a broad white stripe down the middle of back. Wings black, spotted with white, these spots, on the quills, mostly in pairs, one on each web, that on the inner web usually much the larger; the wing-coverts and inner secondaries with but few or none of these white spots. Middle tail-feathers black; the next pair black, or at most edged with white on terminal half of outer web; on the third pair the white covering nearly half the feather; on the outer two pairs the black restricted to the concealed basal portion of the feather and to a few small spots, rarely bars, on the terminal half

*ὄρειος = mountain-dwelling.

of the feather. Beneath, including under tail-coverts, immaculate white. Measurements:—wing, 105.1; tail, 65.4; culmen, 18.3; bill from nostril, 14.1; tarsus, 14.6; middle toe and claw, 19.9; hind toe, 13.2; claw of hind toe, 7.7 mm.

Adult female (Type, No. 216, collection of C. F. Batchelder. Loveland, Larimer Co., Colorado, Jan. 27, 1889, W. G. Smith). Similar to the male, but lacking the scarlet nuchal band. Measurements:—wing, 101.9; tail, 66.4; culmen, 18.2; bill from nostril, 14.5; tarsus, 16.0; middle toe and claw, 19.4; hind toe, 13.1; claw of hind toe, 8.0 mm.

While *D. p. oreæcus* is readily distinguished from *D. p. gairdnerii* by the characters given above, it is separable from *D. pubescens* of the East by the scarcity or absence of white spots on wing-coverts and inner secondaries, which character it shares with *D. p. gairdnerii*, by its greater size, and by its unspotted under tail-coverts. This latter character is very uniform; among eighteen skins from various points in the Rocky Mountain Region I find in one only a barely perceptible trace of spotting, while in all examined from the Pacific Coast and from the East the coverts are spotted, or sometimes even barred, with black. The relative size of the three forms is shown by the following average measurements of seventeen *D. p. gairdnerii* from British Columbia, Washington Territory, and Oregon, eighteen *D. p. oreæcus* from Montana, Wyoming, Colorado, and New Mexico, and twenty *D. pubescens* from New England and Pennsylvania.

	Wing.	Tail.	Culmen.	Bill from nostril.	Tarsus.	Middle toe and claw.	Hind toe.	Claw of hind toe.
<i>D. p. gairdnerii</i>	94.8	60.7	17.2	13.8	15.6	19.1	13.0	7.6
<i>D. p. oreæcus</i>	102.0	66.5	18.3	14.3	15.6	18.7	12.8	7.6
<i>D. pubescens</i>	94.4	59.6	17.7	13.6	15.4	17.6	12.5	7.2

Specimens from many intermediate localities show, as might be expected, every degree of intergradation between the typical forms, and this varies quite regularly according to the position of each locality.

Downy Woodpeckers from southern California show but a slight trace of the smoky tinge of *D. p. gairdnerii* and are even smaller than the Northwest Coast birds, but this seems hardly sufficient ground for their specific separation. It appears to have been a bird of this extreme southwestern form that Malherbe in 1861 described under the name of *Picus turati*. It was killed,

he says, not far from Monterey, and he describes it as not differing much from *D. p. gairdnerii* except by its smaller size.* The species is by no means abundant in southern California, and I have seen no specimens from south of San Bernardino County. A series of ten from various points in the southern half of the State gives the following average measurements: wing, 90.9; tail, 57.6; culmen, 16.9; bill from nostril, 13.2; tarsus, 15.1; middle toe and claw, 17.5; hind toe, 12.2; claw of hind toe, 7.2 mm.

AN UNUSUAL FLIGHT OF KILLDEER PLOVER
(*ÆGIALITIS VOCIFERA*) ALONG
THE NEW ENGLAND COAST.

BY DR. ARTHUR P. CHADBOURNE.

A VERY unusual flight of Killdeer Plover occurred along the New England coast in the latter part of November, 1888, and I have succeeded in collecting some data that may help to show from whence the birds came, and why they were found in certain places while only a short distance away they were absent or found in small numbers.

My data would have been far from satisfactory had it not been for the kindness of Dr. C. Hart Merriam, Chief of the Division of Economic Ornithology of the U. S. Department of Agriculture, who sent circulars to all the light-house keepers on the Atlantic coast, asking about the occurrence of Killdeer Plover in the fall of 1888, and to these reports I am largely indebted for what I have been able to find out about the flight in question. Where there seems to have been any doubt of the identity of the birds noted, the report has been excluded from the following list, and this has necessarily left out some places where the birds appeared in small numbers.

* "Le *p. Gairdneri* d'Audubon a exactement, d'après ce dernier auteur, les dimensions du *pubescens*, qui est plus grand que mon espèce nouvelle." —MALHERBE, *Mémoires de la Société de Ornithologie*, Vol. I, p. 126.

Before receiving the circulars sent out by Dr. Merriam I succeeded in collecting a number of data that appear in the list given below and are marked with an asterisk.

<i>Locality.</i>	<i>First Seen.</i>	<i>Remarks.</i>
Nova Scotia.		
Cape Sable.....	Latter part of November.	Remained till January.
Negro Island....	Nov. 26.....	After the big gale. Came in in afternoon from the east. Remained till Dec. 20.
Seal Island.....	Nov. 25.....	Remained one month.
Westport.....	Middle of November.	
New Brunswick.		
*"Bay of Fundy"....	Dec. 1 (?).....	Mr. Geo. A. Boardman. (See below).
Belledune.....	Nov.....	Remained till late in December. 100-200 in a flock.
*Grand Manan....	Dec. 1 (?).....	Mr. Geo. A. Boardman. (See below.)
Southwest Head...	Nov. 26.....	Scattered flocks. Remained till late in December. Came from the east.
Swallow Tail.....	Nov. 28.....	Small flocks after a gale. Remained till late in December.
Maine.		
Boon Island.....	Nov. 26.....	Last seen Nov. 29. Small flocks.
Cape Elizabeth...	Nov. 28.....	Flocks of from 25 to 50. Last seen Dec. 10.
Goat Island.....	Nov. 25.....	After N. E. gale. Last seen Jan. 4.
Narragausus.....	Dec. 1.....	Stayed about four weeks. Small flocks.
Petit Menan.....	Dec. 1.....	Small flocks. Remained until Dec. 7.
Pond Island.....	About Nov. 20.....	Remained 2-3 weeks.
*Portland.		See 'Auk,' Vol. VI, 1889, p. 69.
Seguin.....	Last of November.....	Remained two weeks.
Wood Island.....	Nov. 26.....	Quite large flocks. Stayed until Dec. 10. Came in heavy N. E. gale.
New Hampshire.		
*Isles of Shoals...	Nov. 25.....	Large numbers in the midst of the great storm. Remained until Jan. 31.
Massachusetts.		
Baker's Island....	About Nov. 20.	
Brant Point.....	Nov. 26.....	Large flocks, in severe N. E. storm. Last seen Dec. 6.
*Cambridge.....	Dec. 25.....	One.
Cape Ann.....	Nov. 26.....	Last seen Jan. 18. Common until Dec. 15.
Cape Cod.....	Nov. 26.....	In flocks. Left about Dec. 20.
Cape Poge.....	Nov. 26.....	After the gale. Left Dec. 6.
Chatham.....	Nov. 25.....	Scattered all over old pasture fields. "25 years since these birds were seen here." Still present on Jan. 29.

<i>Locality.</i>	<i>First Seen.</i>	<i>Remarks.</i>
*Chatham.....	About Nov. 26.....	Large numbers, over beaches and upland. Came in during the storm.
Cuttyhunk.....	Nov.....	Still about on Jan. 26.
*Essex.....	About Nov. 29.....	Flock of twenty-five.
Hyannis and Range Beacon.....	Nov. 26.....	Small flocks, over considerable territory. Last seen about the middle of Dec.
*Ipswich.....	Nov. 29.....	Two.
Marblehead.....	About Nov. 25.....	In small flocks. Seen last about Dec. 10.
*Marshfield.....	Dec. 7.....	One. (Probably others.)
Mayo's Beach.....	Nov. 26.....	Middle of January, some seen. "Meadows all full of them."
Monomoy Point.....	Nov. 26.....	Last seen on Jan. 10. "Not appeared in this neighborhood.... (before) since 1870, to my knowledge."
*Nantucket.....	Nov. 27.....	Whole island covered with them.
Nauset Beach.....	Nov. 26.....	Last seen Jan. 22.
*Provincetown.....	Late in Nov.....	"Just after the big storm."
and Chatham.		Very large numbers.
*Revere Beach.....	Nov. 29.....	Two.
Rockport.....	Nov. 28.....	"They were very plenty along the shore of the mainland, and were in flocks of twelve or more." "Came after a violent gale."
Wood End.....	Nov. 26.....	Last seen about Dec. 10.
Rhode Island.		
Block Island.....	Nov. 23 (?).....	Last seen Dec. 24.
Conanicut Island.....	Nov.	
Gull Rocks.....	About Nov. 24.....	Remained a few days.
*Newport.....	Nov. 24.	
Point Judith.....	Nov.	
Sakonnet.....	Nov. 25.	
Watch Hill.....	Nov. 25.....	Several small flocks and one large one.
Connecticut.		
Black Rock.....	Last of Nov.....	Two.
New York.		
*Good Ground (L. I.).....		First seen about Dec. 1.
Great West Bay.....	Nov. 26.....	Last seen about Dec. 12.
Montauk Point.....	Nov. 25 (?).....	Came in with a N. E. gale.
New Jersey.		
Navesink.....	Dec. 15.	
Pennsylvania.		
Schooner Ledge.....	Dec. 15.	

Formerly the Killdeer Plover was not uncommon in southern New England, but for years it has been very rare. The birds still breeds in Rhode Island, however, for Mr. Charles H. Lawton of Newport writes that "the Killdeer is quite plenty with us, but has

decreased considerably of late years. They lay in several localities and generally stay until early November," and Mr. J. M. Southwick says "the species is not uncommon at Bristol, R. I., or was not a few years ago; not abundant ever, and perhaps rarer for the past four years." Still anything like a fall flight of Killdeer in Massachusetts is a thing of the past and there is no recorded instance of such vast numbers as visited our coast in November, 1888.

On the eastern side of Cape Cod, on Nantucket, and the Isles of Shoals, large numbers of Killdeer came in from the sea, some of them on November 25, but the majority on the morning of the 26th. One of the market gunners said that "the whole island of Nantucket, both beach and upland, was covered with the birds" which occurred in loose straggling flocks. There seemed to be no other species with them*; and though not fat, they were not in very poor condition. He had seldom known of this species on the island, and then in extremely small numbers. Along the eastern side of Cape Cod the Plover were as abundant as on Nantucket, and the conductors on the trains running from Provincetown to Boston reported that during and just after the big storm late in November, 1888, the whole country about Provincetown was alive with Killdeer Plover, a bird that few of the gunners knew, while all along the beaches from Provincetown to Chatham large flocks were continually started up by the train. "It seemed as if we were passing through one big flock of them all the way, and the fog made them afraid to go out to sea against the wind." At the Isles of Shoals, Mrs. Celia Thaxter writes,† "I was not at the Shoals when the birds appeared. All I know about them my brother tells me. It seems they appeared in large numbers, hundreds of them, in the midst of the great storm of November 25, feeding in the little valleys where the sea swept across the island. All sorts of strange things were cast up by the storm on these islands and the birds were busy devouring everything they could find, always running, chasing each other, very quarrelsome, fighting all the time. They were in very poor condition, so lean that the men did not shoot them after the first day, a fact that gives your correspondent great satisfaction! They

* The only exceptions I know of are one *Totanus melanoleucus* at Winthrop, Mass., and another at Marshfield; also a few *Charadrius dominicus* at Newport, R. I.

† Through the kindness of Mr. Bradford Torrey I have been allowed to use Mrs. Thaxter's letters to him about the Killdeer Plover.

were very tame, would settle back immediately after being disturbed. Their cry was very annoying, piercing, and exasperating, especially as they kept it up all night. My brother said they would allow you to come within twenty feet of them without moving. No one had ever seen them before." I was told that at Chatham about Nov. 26 the birds swarmed everywhere, but after the first day or two grew shy and were found inland about ponds and spring-holes. After the storm the birds gradually disappeared, except a few that remained at favorable points for a long time; at Chatham some were seen as late as Dec. 22, and at the Isles of Shoals they had not all gone on Jan. 31, 1889. On the eastern end of Long Island the birds apparently occurred in large numbers, though I have no very satisfactory data from that region. I have not heard of any from farther up Long Island Sound, or on the Connecticut coast, except at Black Rock, which is near Bridgeport. Dr. William C. Rives says that about Newport Mr. Charles H. Lawton reports: "The day of the big storm, Nov. 24, they [the Killdeer Plover] made their appearance, and have been feeding in this locality ever since. I have been noting a large flock that has been feeding in the wet land at the head of Almy's Pond. . . . They were there last night (Dec. 24). I have only heard [of them] within a few miles along the coast, so can't say how far the flight extends. They have been very abundant, never heard of such a flight before. . . . I have also heard of some Golden Plover the first day or two of the flight." From Cape Cod as far north as Newburyport, and probably to Portland, Maine, the birds were common, but not in anything like the numbers found along Cape Cod and on Nantucket. At Portland and Biddeford, Maine, they were apparently about as plenty as near Boston. Mr. Geo. A. Boardman of Calais, Maine, writes "there has been quite a flight of Killdeer Plovers, the first I heard of was shot from a flock on Dec. 1, and the last Dec. 15. Most were sent me from Grand Manan. It is now [Dec. 29] two weeks since I have heard of any being shot." From Nova Scotia and New Brunswick I have only the light-house reports, but these seem to show that the eastern and southern parts of Nova Scotia were the most visited. South of Long Island no birds are reported until well into December, and by that time many would have worked their way south.

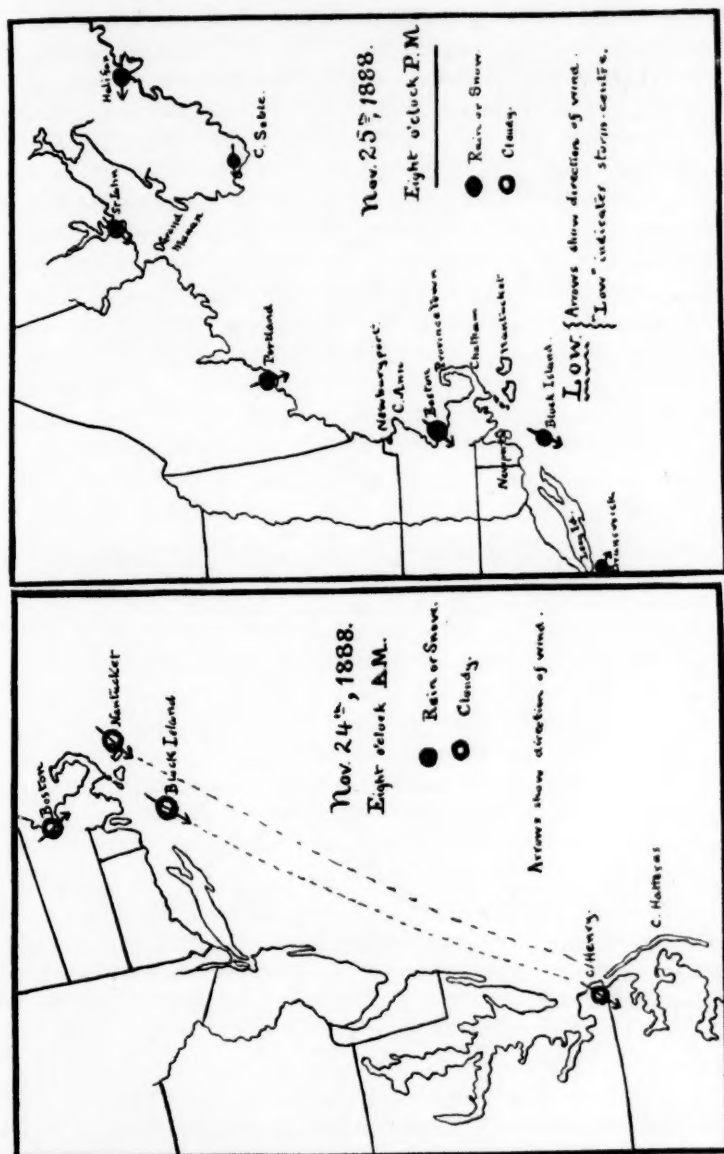
The flight seems to have been limited to within a mile or two

of the coast. The farthest inland that I know the species to have been shot is Cambridge, Mass., where a single bird was taken by Mr. W. P. Coues on Dec. 25, 1888.

The region from which these Plover came cannot be absolutely proved, but there seems to be evidence enough to leave little doubt that it was somewhere in the South Atlantic States north of Florida. Mr. S. H. Henshaw has most kindly examined the stomachs of several Killdeer shot on Nantucket between the 28th and 30th of November, not more than three days after their arrival on the Island. They contained practically nothing but insects, and most of these were so broken and macerated that they had undoubtedly been in the stomach for several days, probably a week. There was no species that does not occur on the Massachusetts coast, though the majority are far more common in South Carolina, North Carolina, and Virginia than on Nantucket. "Had the birds come from west of the Alleghany Mountains some characteristic insects would almost surely have been found, and the same is true if they had come from Florida." Taking it for granted that this portion of the flight, at any rate, came from the Atlantic States, somewhere north of Florida and south of New England, probably not north of Virginia, let us see how the great influx of Killdeer Plover along the New England coast can be accounted for.

In the southern Atlantic States the Killdeer are probably migrating southward during the latter part of November. In the Carolinas on Nov. 23 at 8 P. M. the wind was northeast and from eight to ten miles an hour, while farther inland it was due north and only six miles an hour, and throughout the whole region it was somewhat cloudy. Mr. W. W. Cooke * and others have proved that slight cloudiness will not keep birds from starting on their southern journey, and on this evening there was a light and favorable wind to help them south without being so strong as to make it hard for them to direct their course as they wished. During the night of the 23rd it grew more cloudy, but the birds, though unable to see their landmarks, yet thinking their course the right one would have kept on their way. In the mean time the wind had gradually shifted more to the west, until at eight A. M. it was due north or northwest, and therefore

* 'Report of Bird Migration in the Mississippi Valley in the years 1884 and 1885. W. W. Cooke. Washington, 1888.



BASED ON THE TRI-DAILY WEATHER MAPS OF THE U. S. SIGNAL SERVICE.

off-shore, and blowing at the rate of forty miles an hour. After the earth had been hidden by clouds the greater velocity of the wind would not have been noticed, for the birds would have been carried onward as fast as the clouds below or around them, and it is well known that a balloon may move at a tremendous speed without the occupants knowing it if the earth is hidden from view. This must have brought the birds that started from near the coast over the ocean long before morning, and as they descended through the clouds expecting to feed and rest they would have found themselves over the water and carried along by a violent wind; they would then have flown but little above the sea so as not to pass over any land without knowing it.

At Charleston, South Carolina, on November 24, at 8 A. M., the wind was blowing forty miles an hour and was off-shore, and the storm centre was moving north at the rate of seven hundred miles in twenty-four hours. Some of the Plover nearer shore may have struggled against the off-shore wind long enough to get back to land, but those farther out must have been caught in the northern current and have been unable to make way against the much stronger gale blowing north on the eastern side of the storm centre. By the time they had been carried around the storm centre and had reached the weaker back current, they would have completely lost their bearings and have ceased to struggle against the storm. Even if they had held their own against the wind, they would have gained nothing, for the storm was moving north all the time and would have carried them with it. On the morning of Nov. 24 the only points on the Atlantic coast where the wind was blowing on shore were Cape Cod, Long Island, parts of the Massachusetts and Maine coasts, Nova Scotia and near Cape Hatteras, and the birds, carried along by the wind, would have been brought to land at these points. Around the storm centre the wind is continually working inward in a spiral, and therefore during the northward progress of the storm the birds were being concentrated more and more around the central point and by the time this point was near Block Island, N. Y. (Nov. 25), most of the Plover were circling around it with progressively smaller and smaller numbers on the periphery. Having reached the neighborhood of Block Island, the storm centre remained stationary for about forty-eight hours, and this undoubtedly gave time for all of the birds to reach land before the storm moved farther north.

In this way we should expect to find the largest number of the birds on the coast near Block Island where the wind was on shore, and at points more and more distant from this place their numbers would gradually diminish. A comparison of the list of localities at which the birds were found, with the map showing the direction of the wind when the centre was near Block Island, will show that this was apparently the case. At Cape Hatteras we should expect to hear that Killdeer appeared in considerable numbers on Nov. 24, but the storm was moving north so rapidly that in a few hours the wind blew across Cape Cod and Martha's Vineyard (see dotted line on the map) before reaching Cape Hatteras, and few if any of the birds would have been carried across the land without alighting.

A NEW SPECIES OF DUCK FROM TEXAS.

BY GEORGE B. SENNETT.

Anas maculosa, nov. spec. MOTTLED DUCK.

♂ *adult*. Type in my collection, No. 5857, taken by J. A. Singley, April 4, 1889, at Nuesces Bay, near Corpus Christi, Texas; collector's No. 1386.

SPEC. CHAR.—Top of head blackish brown, margined with very pale buff; chin and throat isabella color; cheeks buffy white with narrow streaks of dark brown. Feathers of breast, wings, upper parts, and flanks blackish brown margined with pale buff. Under parts buffy white, each feather with a broad blackish brown spot near the tip, giving a decided mottled appearance. Under tail-coverts blackish with outer margin of inner web reddish buff, that of outer web buffy white. The four median feathers of tail blackish brown; the others fuscous margined with pale buff having a V-shaped mark as in *A. fulvigula*, but of a buffy white. Under surface of all tail-feathers light gray excepting the four median which are blackish brown. Lining of wing white. Speculum metallic purple, feathers tipped with white. Bill has small black spot on base of lower edge of upper mandible, as in *A. fulvigula*. Feet reddish orange. Wing, 10.05; culmen, 2.25; tarsus, 1.75; middle toe and claw, 1.50 inches.

♀ *adult*. Type in my collection, No. 5858, taken by J. A. Singley, April 4, 1889, at Nuesces Bay, near Corpus Christi, Texas; collector's No. 1387.

Similar to the male excepting that there is no black spot on the bill at the base of the upper mandible. Wing, 10.00; culmen, 1.90; tarsus 1.60; middle toe and claw, 1.45 inches.

Young, half fledged. Type in my collection, No. 5188, taken by John M. Priour, July 8, 1887, at Nuesces River, near Corpus Christi, Texas.

Top of head mixed brown and white; forehead, cheeks, chin, and throat white, anteriorly tinged with pale buff. Back brown; scapulars, breast and under tail-coverts black and reddish buff; belly blackish brown and pale buff.

I remember seeing in 1882 several pairs of this Duck on the wing when I was collecting about the extensive grass flats of Corpus Christi Bay near Padre Island. I then felt sure that it was unlike the Black Duck (*Anas obscura*) so common in the Northern States, but neglected to procure specimens. Of course I was delighted when, this season, I obtained a pair of these Ducks, adults, in breeding plumage, which, with the half-fledged young taken nearly two years ago, determine a new form of the genus breeding in southern Texas.

The new Ducks come nearer to *Anas fulvigula* than to *Anas obscura*, and after comparing them with some fine examples of *fulvigula* in the American Museum (collected by Mr. Chapman this spring in Florida), I sent the Texas birds to Mr. Ridgway that he might decide how near they came to *Anas diazi* of Mexico, which he described in 1886. Mr. Ridgway's opinion is so appropriate to the introduction of the new bird that I quote from his letter as follows: "Unfortunately I am not able to compare your Texan Black Ducks with a specimen of *Anas diazi*, the only known specimens of the latter having been taken to Mexico with the rest of the Mexican Collection. I had a photograph taken of the type, with which your birds have been compared, and have also compared them with the detailed description in Proc. Nat. Mus., Vol. IX, pp. 171-173, and cannot make them out to be the same. Your birds have larger bills and feet, the former with a black spot at lower basal angle, in males, as in *A. fulvigula*, and without the darker culmen; top of head more broadly streaked with buff, and buff markings of back, etc., also apparently broader; white subterminal band across greater wing-coverts wanting; tail-feathers differently marked, etc. I think the safer plan would be to describe your bird as a new species, more nearly allied to *A. fulvigula* than *A. diazi*."

During my absence from the American Museum Mr. D. G.

Elliot has kindly sent me a comparative description of the differences between *A. fulvigula* and this new species, and I find them so good that I have adopted much of his wording in the specific characters given above. Mr. Elliot says, "It seems to me a good species and I wonder it has been overlooked."

The most marked differences between *A. maculosa* and *A. fulvigula* are that the cheeks of the former are streaked with brown while those of the latter are plain buff; the speculum is purple instead of green; the general effect of the coloration, especially on the under sides, is mottled instead of streaked; the light color everywhere is a pale buff or isabella color instead of a rich, deep buff; and the tail markings also are different, as indicated. The female had in its oviduct a perfect egg, which I have not yet received from Mr. Singley. Mr. Priour is familiar with the Duck, and finds it not uncommon on the grass flats of Nuesces Bay and River.

RECENT LITERATURE.

Cory's Birds of the West Indies.*—Mr. Cory has republished in a book of 324 pages his various papers on West Indian birds published during the last three years in 'The Auk,' together with much new matter, including two maps of the West India Islands, and a bibliography of West Indian ornithology (pp. 5-14). Several new cuts have been added, and changes have been made at various points in the text, which in the main is a reprint from the electrotypes plates of Mr. Cory's series of papers in 'The Auk.' About 555 species are recorded as West Indian, of which 350 are described at length; the remaining 205 (or thereabout) are North American, respecting which merely the character of their occurrence in the West Indies is chronicled, with a citation of the references to their West Indian history. Nearly three fifths of the species treated are distinctively West Indian, being not found elsewhere. Mr. Cory states (p. 3) that in the preparation of the work he examined a large series of birds

*The | Birds of the West Indies. | Including | all species known to occur in the Bahama Islands, the Greater | Antilles, the Caymans, and the Lesser Antilles, excepting | the Islands of Tobago and Trinidad. | By | Charles B. Cory, | Curator of Birds in the Boston Society of Natural History, Fellow of the | [= 5 lines of titles] | Author of | [= 4 lines, titles of works. | — | Illustrated. | — | Estes & Lauriat, | Boston, U. S. A. | 1889.—8vo, pp. 324, 2 maps, and numerous woodcuts in the text.

from nearly all of the islands of the West Indies, numbering altogether many thousands of specimens. He, himself, made five trips to different parts of the West Indies, and besides, sent out various collectors to the different islands, some of whom were in the field for from six to eighteen months each. Mr. Cory's book forms an invaluable hand-book of West Indian ornithology, and will prove indispensable to all future workers in this field, his citation of the extensive literature being especially important.—J. A. A.

Sclater's Catalogue of the Mesomyodian Passeres.*—Few books can be more welcome to the general student of birds than monographic works treating of the non-oscine Passeres of America, the literature relating to them being widely scattered and difficult of access, the synonymy perplexing, and the species of the larger genera exceptionally difficult to distinguish. When the task of bringing order out of this almost hopeless chaos is undertaken by a master in the field, as in the present case, whose familiarity with the birds to be treated is admittedly greater than that of any of his fellow-workers in the same field, the ordinary student can but feel that a great burden has been lifted, and a vast flood of light spread over a dark corner of the ornithological field. While the work before us is an inestimable boon, and will make the way far easier for all who may come after, it still leaves much to be desired, and is in some ways disappointing and unsatisfactory. But, from the nature of the case, this was perhaps unavoidable, and the attitude of the reviewer should be one of gratitude for blessings received rather than of criticism and complaint that an ideal treatment of the subject has not been presented.

"In dealing," says Dr. Slater, "with the five Neogean families—Tyrannidæ, Oxyrhamphidæ, Pipridæ, Cotingidæ, and Phytotomidæ—I have followed throughout, with few exceptions, the divisions and arrangement adopted by Mr. Salvin and myself in our 'Nomenclator Avium Neotropicalium,' published in 1873. It would have been better, no doubt, in some respects, to have attempted a thorough revision of these groups; but I felt that the short time assigned to me for the preparation of the present volume, and the comparatively little leisure I had to devote to it, would not give me a chance of performing this revision satisfactorily. This, therefore, I must leave to some younger and better qualified worker to perform. Nevertheless, . . . I feel that I have accomplished a not unsatisfactory piece of work, and one that will enable the ornithologist of the future, who may wish to take in hand a real monograph of these difficult groups, to start with much greater advantage." To concede this claim,

*Catalogue | of the | Passeriformes, | or Perching Birds, | in the | Collection | of the British Museum. | — | Oligomyodæ, | or the Families | Tyrannidæ, Oxyrhamphidæ, Pipridæ, Cotingidæ, | Phytotomidæ, Philepittidæ, Pittidæ, | Xenicidæ, and Eurylæmidæ. | By | Philip Lutley Slater. | London: | Printed by order of the Trustees, | 1888.—8vo, pp. xx + 495, pll. xxvi. Forming Vol. XIV of 'Catalogue of the Birds in the British Museum.'

which we most heartily do, is to make but faint recognition of the heavy obligations ornithologists must feel they are under to the author of the volume under notice.

Of the thirteen families of so-called Mesomyodian Passeres only nine, forming the section Oligomyodæ, are treated in the present volume; the remaining four (Tracheophonæ), all New World forms, will form the subject of a succeeding volume, by the same author, already nearly ready for publication. Of the families treated 655 species are recognized, represented in the British Museum Collection by 7360 specimens, only 38 of the species recognized as valid being unrepresented in the collection, which includes 161 "actual 'types' of species" treated, and much other authentic material. The Tyrannidæ number 409 species; the Oxyrhamphidæ, 5; the Pipridæ, 79; the Cotingidæ, 110; the Phytotomidæ, 4; the Philepittidæ, 2; the Pittidæ, 50; the Xenicidæ, 3; the Eurylæmidæ, 11.

The Tyrannidæ thus outnumber, nearly two to one, the species of all the other eight families collectively. As is well known to our readers, they are exclusively American, and mainly limited to the American tropics, although a few genera are widely dispersed over North America. "Their generally uniform plumage and similar external structure renders the discrimination of the species of the Tyrannidæ and their grouping into genera extremely difficult, and in many cases unsatisfactory." Add to this the considerable range of individual and seasonal variation occurring in many of the genera, and the difficulties in the way of the systematist are in some cases well nigh disheartening. While many species "no doubt remain to be discovered, as the more remote portions of South America come to be investigated," it is equally certain that as more material is accumulated many hitherto currently recognized species will have to be reduced to synonyms. As might be expected in large genera of closely allied species, brief descriptions, such as are given in the present work, fail to discriminate, and the characters given in the 'keys' fail to throw much further light. This, in many cases, is the fault of the 'species,' but not infrequently the fault of haste in the preparation of the work. Commonly, however, a line or two is added to the description stating the supposed differences separating one closely allied species from another. In many instances the author is laudably conservative in respect to admitting species that have slight claims to admission, while in other similar cases judgment is apparently waived in favor of current tradition. In other cases species have been merged which are unquestionably distinct.

Perhaps the most unsatisfactory feature of the work is the omission to give more than a brief description of an average adult bird, in cases where there is much seasonal variation in plumage, and often very great variation between adult and young. A case in point is *Copurus colonus*, under which *C. funebris* Cab. & Hein. is placed as a synonym, without a word of comment, or any indication that the young bird is in any way different from the adult. The adult *C. colonus* is a black bird, with a white rump and a grayish white head, and the middle pair of tail-feathers

three times the length of the lateral ones. The young (on which *C. funebris* is supposed to have been founded) is wholly deep black, with the middle tail-feathers but slightly exceeding the others in length. Such descriptions of course cover only half the ground, and are exceedingly inefficient.

Lack of space forbids criticism of the many points in respect to synonymy and nomenclature which almost daily use of the work for several months has brought to light, many of which we hope to cover later in other connections. They do not, however, seriously detract from the value of the work, which in its orderly grouping of the species, the marshaling of thousands upon thousands of references to the literature of the subject, and the fair clews given for the recognition of the species will ever render the work invaluable to all future workers in the same field.—J. A. A.

Sclater and Hudson's 'Argentine Ornithology.'—The second volume* of this excellent treatise has just appeared, completing the work. Its general character having been already stated in our notice of the first volume (*Auk*, V, p. 199), it only remains to speak of the special features of the present one, which contains an account of all the non-Passerine birds found in the Argentine Republic. The high praise we gave the first volume is fully merited by the second. In this the biographies are in many instances more extended, especially in the case of several of the Hawks and Owls. The whole number of species recognized as belonging to the Argentine avifauna is 434, of which 205 are treated in the present volume. An important feature of the work is an annotated bibliographical appendix, giving a list of the works and papers referred to in the body of the work, to which is added a list of the principal localities where collections have been made. An 'Introduction' of eight pages treats of the avifauna analytically, in reference to the numerical representation of the various families and orders, as compared with the Neotropical region at large.

As stated in our notice of the former volume, we regret that it was deemed necessary to restrict the technical portions of the work to brief diagnoses of the adult bird, with rarely any reference to immature phases or other variations of plumage, since a fuller treatment of this part of the subject would have made the work far more useful as a handbook of Argentine ornithology. At page 11 of Volume II we notice a singular *lapsus pennæ*, the English name of *Chordeiles virginianus* (Gm.) being given as "Whip-poor-will" in the heading, while in the biographical text the species is referred to as "the well-known Whip-poor-will of the United States!"

* Argentine Ornithology. | A | Descriptive Catalogue | of the | Birds of the Argentine Republic. | By | P. L. Sclater, M. A., Ph. D., F. R. S., Etc. | With Notes on their Habits | By | W. H. Hudson, C. M. Z. S., late of Buenos Ayres. | [Vignette] Burmeister's Cariama. | — | Volume II. | — | London: | R. H. Porter, 18 Princes Street, Cavendish Square, W. | 1889.—8vo, pp. i-xxiv + 1-251, pll. col. xi-xx.

As already noted, Mr. Barrows's papers on the 'Birds of the Lower Uruguay,' published a few years since in this journal, are freely cited, but unfortunately his species are not always correctly synonymized by our authors—a mistake in most cases excusable, since there is generally no clew, except the name, to the species really meant. Having recently had in hand many of Mr. Barrows's specimens of the more difficult groups, it may be well, in the interest of future writers, to correctly allocate some of Mr. Barrows's species thus misplaced in the 'Argentine Ornithology.'

Cyclorhis viridis Barrows is naturally placed (Vol. I, p. 24) under *C. altirostris* Salv. [= *C. viridis* (Vieill.)], but Mr. Barrows's specimens prove to be true *C. ochrocephala*.

Elainea albiceps Barrows is *Empidagra suuriri* (Vieill.), and thus of course is naturally but wrongly placed (Vol. I, p. 145) under *E. albiceps* (d'Orb. and Lafr.), which is Mr. Barrows's *E. modesta*.

Leptasthenura ægithaloides Barrows is *L. platensis* Reich., a form Mr. Sclater doubtless does not admit. Mr. Barrows's specimens, however, represent a bird very different from the true *L. ægithaloides* of Chili.

Phacellodomus ruber Barrows proves, on comparison of Barrows's specimens with Lafresnaye's types, to be the true *P. striaticollis* (d'Orb. and Lafr.).

It is but fair to say that actual errors in the identification of Mr. Barrows's species are chargeable either to myself or to Dr. Burmeister, whose opinions Mr. Barrows accepted (cf. Auk, I, p. 319).—J. A. A.

Gould's 'Birds of New Guinea.'—In 1871 the late Mr. John Gould began the publication of a work in five volumes folio, on the Birds of New Guinea and adjacent islands,* to be issued in twenty-five parts. At the time of Mr. Gould's death, in 1873, only twelve of the parts had been issued, the thirteen remaining parts having been prepared by Mr. R. Bowdler Sharpe, the eminent ornithologist in charge of the Department of Birds at the British Museum. The work contains 320 plates, in the excellent style of Gould's other well-known large folio works on the Birds of Asia, Australia, Great Britain, etc. The 'Introduction,' by Mr. Sharpe, gives a historical summary of ornithological exploration in New Guinea and the Papuan Islands. The few Australian birds included, form, as it were, a further supplement to his 'Birds of Australia.' A page of letter press accompanies each plate, describing the species figured, and giving a short sketch of its history. The many birds of gorgeous plumage inhabiting New Guinea and neighboring Islands—as the numerous species of Parrots, Birds of Paradise, and Fruit Pigeons—furnish wonderfully striking subjects for illustration. To say that the work is in Gould's well-known style sufficiently indicates the high character of this magnificent contribution to ornithology.—J. A. A.

* The Birds of New Guinea | and the adjacent Papuan Islands, | including any new species that may be discovered in Australia. By | John Gould, F. R. S., etc. Part [s] I-XXV. | London, Dec. 1875-Dec. 1888.

Bird Migration in the Mississippi Valley, by W. W. Cooke.—Taking up this most interesting little volume, we desire in the very first place to express our admiration for the system and method of work. Whilst agreeing with many of the statements, theoretical or otherwise, we think it desirable to take up the whole of the preliminary chapters in detail, page by page, whether we agree or not.

Page 11. "Inherited Experience": "The habit was transmitted from parent to offspring": "governing impulse."—May we suggest:—Yes; inherited instinct aided by education, or "educated instinct," and guidance of young by old—as a more natural explanation than the other? "Love of nesting ground, the foundation of desire for migration."—We cannot agree with the expression "foundation," etc.,—but we perfectly agree with the concluding clauses of the same paragraph, as to "memory inherited": and we also believe, that *choice of situation*, and *visual selection* must not be left out of the question. We quite agree that "strong home-love" is an important factor, but it is aided by memory, the suitability of the site, and great powers of vision (therefore selection) by the passing migrants, young or old.

The statement, in the editorial foot-note to same page (p. 11) that "Birds desert their winter homes because the food supply fails" seems to me to demand a great deal of proof. But the following condition seems to me more deserving of attention—viz., *temperature* as a *first* cause; and that "climatal conditions become unsuited to their needs." Of course, all dovetail into one another—temperature, insect-life, bird-life, conditions of existence, etc., motherly and parental instincts, incubation considerations; and a *large* question is at once opened up. To arrive at first causes means, first, simply accumulation of materials.

At p. 12.—The question of the great migration from north and south of certain Waders and Warblers passing over great distances seems to us simply to depend upon *temperatures* and *consequences* of temperatures. The Knot (*Tringa canutus*) finds a certain *normal* temperature and conditions of life, at, or nearest to, both poles, north and south.

Page 12. Undoubtedly we consider that "Birds discern approaching meteorological changes." The ornithologists who *deny* it, must deny it, upon *exceptions* to the rule, which have come under their own cognizance. Most sportsmen know how irritable, how uneasy, how watchful and abrupt are the movements of wild fowl on the *eve* of a change of weather, or even for a day or two before it is potent to human senses. Even how sportsmen (of experience), when they spring Snipe in wisps wide and wild, which mounting high in air direct their after flight directly away, think it high time to *wire* for fresh supplies of cartridges, in anticipation of an 'Arctic winter,' and a long crusade of snow and frost. But we doubt, except on *rare occasions*, if spring storms can be gauged in their effects as accurately as autumn storms can.

The concluding argument of this portion—at p. 12—must, we think, be considered subject to the others—I mean the considerations of *age* of individuals, etc. Lower animals, such as even the "hardier waterfowl (Ducks

and Geese)" are not infallible, any more than human beings are infallible in their judgments; and it really cannot be argued that they can *always* foresee these changes. It is well authenticated that in the Outer Hebrides Wild Geese on their spring migration northwards are greatly dependent on the actual personal guidance of their parents or guardians. An old bird distinctly leading detachments, from one favorite feeding or resting place to another and returning south again in cases of further services being required has been for ages known, and well observed by competent observers! What would a flock of geese do if their leader were shot or otherwise lost to them, and the flock were all young birds? Certain instincts *would* guide them no doubt, but *not too accurately*.

Returning to the former subject of "discernment of approaching climatal conditions" I would like to recall the often-observed fact of the disappearance of *mosquitoes* fully *half an hour* before the first advent of the north wind on the tundras of northeastern Europe, as observed, to our intense relief, by Seebohm and myself! I say, before the slightest suspicion of approaching north wind was perceptible to our senses, the mosquitoes suddenly dropped senseless and *stingless* into the wild grasses of the tundra. With a sigh of relief, we mutually whispered at last, as we lay watching—say a Plover or a Stint to its nest, "Ah! the north wind!" Then came the hurry of the birds up to cover their nearly incubated eggs, in the shallow depressions of the tundra.

Page 13. Now comes a most interesting question. *First*, if old birds arrive first, they keep bold and jealous charge of their own old nesting places. But if young birds arrive first, they are driven away, before they can breed, by the older ones if the latter really do ever arrive later. I believe the *old birds* always arrive first. But in America, where the trend of the migration is from north to south and south to north, over continuous areas of land, and where every valley and depression soon becomes known and recognized by the migrants, *old and young* travel at the *same elevation*, or much more approximately so than in Europe. But in Europe where the trend of the migration is over both land and sea and persistent in its east to west direction in autumn, and *vice versa* in spring (at least as regards land birds), I *believe* the *old* birds travel at a much higher elevation than the young birds, and travel more freely, still guarding the young beneath them. We have still to learn much as to the vision of birds, old and young, horizontal and vertical, above and below, and we know comparatively little about their power in these respects; except that an American astronomer is stated to have identified Curlews in the field of his telescope at over four miles distance above the earth's surface, traversing the disk of the moon.

If the American statement that old birds invariably predate the young; and the European statement that the young predate the old, are equally true, may not the variance be explained thus:—

In America the trend of the *land* and *migration* is continuous north and south. Therefore, the old and young *can* travel over known courses at similar elevations, the old *guiding* the young.

In Europe the trend of the *land* and *migration* is *discontinuous*; east and west; and therefore the older, *stronger-flying* birds ascend to higher levels to see over both land and sea, whilst the young birds keep lower down, but by *mutual* powers of vision are still guided by the higher-flying old birds above. Reaching land, the young birds sink exhausted it may be, but the 'first wave' of old birds passes on upon their further journey. More could be urged on this aspect of the question, but we refrain in fear of occupying too much valuable space. One more remark: Fogs and mists and haze and darkness, blot out the landmarks by sea from even these high-flying pioneers, and as described by Herr Gätke, "in the clap of a hand, in a second of time"—or words to that effect, or nearly—the island of Heligoland, off the entrance to the Elbe, is crowded by birds, in *tens of thousands*, when the fog lies heavy around.

We have only taken 13 pages of the article by Mr. Cooke as text for our reply, but there are many valuable and interesting points brought out and referred to in subsequent pages, worthy of equal attention. If our notes can be of use, we are happy to contribute even the smallest mite. If it should be considered desirable, further remarks upon pp. 14 *et seq.* might follow, but what *has already been said*, we believe, will be suggestive of what *might* be said again, and reasons and arguments adduced for the formation of what we in Europe call '*rushes*' and you in America, the '*arrival of the bulk*'—from your own showing.—J. A. HARVIE-BROWN, M. B. O. U., C. M. A. O. U.

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GENERAL NOTES.

The Florida Gallinule Breeding in Vermont.—Early in June, the present year, I left New York City for a short collecting trip in Vermont, in quest of, among other things, the Florida Gallinule (*Gallinula galeata*), in the hope of securing the birds, their nest and eggs, and the proper access-

ories, for a group piece for the American Museum of Natural History. On visiting the locality where in former years I had found the species breeding, my disappointment was very great to find the birds had departed. This locality is Lake Bomaseen, situated about sixteen miles from Rutland, Vermont. My first nest of these birds I found at this place, May 28, 1881. It was built in the cat-tail flags, upon a small, boggy island, quite a distance from the main land. It was slightly elevated above the water, and composed entirely of dry flags, and contained nine fresh eggs. The next season, 1882, I made two trips to the breeding ground, and found one nest, May 28, containing five eggs. This I left, and returned June 5, and found, not far from the first nest, a second one. These were situated on boggy ground connected with the main land. Both nests looked near enough alike to have been made by the same bird. The same kind of material was used as in the nest found in 1881. The first nest contained seven eggs, and the second one eleven. One of the birds was taken.

The next year, 1883, but one nest was found, near the place where two were found the year before. It contained nine eggs, and both of the birds could have been easily taken.

This year, after hunting for two days without result, a gentleman near where I was staying told me he thought a Mr. Johnson, of Hydeville, Vt., had taken the nest this season. When I returned to New York, I found, through Mr. Allen, that such was the case, Mr. Allen having received a letter from him reporting his discovery.

I do not think that more than one pair of birds breed at this lake. It is very probable that others may breed at Fort Cassan and Lambus Point, Lake Champlain.—JENNESS RICHARDSON, *Am. Mus. Nat. Hist., New York City*.

Under date of Hydeville, Vt., June 6, 1889, Mr. A. J. Johnson wrote me as follows: "I wish to establish the fact of the breeding of the Florida Gallinule (*Gallinula galeata*) in the State of Vermont, having found a nest containing ten eggs in Lake Bomaseen, Castleton, Vt. It was built in a clump of rushes, and the nest also was made of the same. I saw the bird, but did not shoot it. Two years ago I shot one near the same place and found the nest. There must be several more breeding near this place, for I heard quite a number. I cannot find any record of this species breeding in Vermont in any book I have."

While the occurrence of the Florida Gallinule in Vermont is on record, the above seem to be the first reports of its breeding in that State.—J. A. ALLEN, *Am. Mus. Nat. Hist., New York City*.

The Killdeer Plover (*Agialitis vocifera*) wintering on the New England Coast.—On the 28th of January, 1889, I discovered seven Killdeer Plovers in a small meadow in Marblehead, where they remained throughout the winter. I visited the place four times in February, and found them always present. My last sight of them was March 1 (six birds), but Mr. Walter Faxon, who had previously seen them on several occasions, found

a single individual as late as March 7. They were doubtless a part of the great flock blown upon the New England coast by the storm of November 25-27, as already more than once mentioned in 'The Auk.' The season was very open and mild (although February averaged rather colder than usual), and the spot was exceptionally favorable. So far as I could judge, the birds suffered no inconvenience from what we may presume to have been a somewhat involuntary sojourn in this latitude.

Mrs. Celia Thaxter assures me that the Killdeers remained at the Isles of Shoals, also, throughout the winter,—“till the very last week in February, growing fewer and fewer and finally disappearing altogether.” Her authorities for the statement are her brother and another resident of the Shoals, one of whom, early in December, shot a bird, parts of which (a wing, etc.) she sent to me for identification.—BRADFORD TORREY, *Melrose Highlands, Mass.*

The Wild Turkey in the North Carolina Mountains.—During the month of July, 1888, the writer was one of a small party which went over the country described by Mr. W. A. Jeffries in the April 'Auk.' Our route was about two hundred miles long, and we spent a month on the way, camping and tramping. We started from Sylva, and, if I mistake not, our driver was the same one employed by him; at least he told us of going through that country with two “bird men” in the spring.

Our object was to collect the plants of the region, and we paid little attention to the birds. We went from Sylva to Highlands by way of the High Falls of the Tuckaseege and Cashier's Valley. At the latter place we met a very intelligent gentleman,—the owner of a gold mine in the vicinity. He pointed out to us the spot where he had the day before seen an old Turkey with a large brood of young cross the road. They were not considered uncommon in the valley. From Highlands we went to Franklin and then on to the Nontehala Mountains, climbing Wayoh Bald on our way. Not far from the summit, by the trail, we found several places where the Turkeys had been scratching, evidently only a few hours before. A day or two later, two of the boys went hunting with a native guide. They found no Turkeys though they saw plenty of ‘signs’. From our conversations with the people I think that while the Turkeys are not perhaps abundant, they can scarcely be called rare.—L. N. JOHNSON, *Evanston, Illinois.*

Buteo brachyurus in Florida.—A fine adult female of this species has been presented to me by Mr. Geo. A. Boardman. The specimen was found by Mr. Boardman in a barrel of millinery skins in a store in Jacksonville, Florida. The barrel contained a number of badly prepared specimens of *Syrnium nebulosum alleni* and *Ajaja ajaja* besides Herons and Waders. The specimen was minus its feet, but was otherwise in good condition. The storekeeper claimed to have received the birds from Charlotte Harbor.—CHAS. B. CORY, *Boston, Mass.*

A Hawk bearing a Legend.—Mr. James M. Knight, keeper of the light-house at Cape Canaveral, Florida, picked up a dead Duck Hawk (*Falco peregrinus anatum*) on the beach near his station, December 10, 1888. He first noticed the Hawk the day before, and saw that it was in feeble condition. On examining it, he found an old fashioned tin cap box attached to its neck by means of a wire. Undoubtedly this had interfered with the capture and deglutition of its food, and as a consequence, the bird was much emaciated. On opening the cap box a piece of paper was found bearing the following legend: "Oct. 10, '88; Schr. Gov. Hall, Frying Pan L't Ship, U. S. A; 7 mile wind, N. E. by E., overcast and moderate.

JOHN CAIN, JR., 516 Linden St., Camden, N. J.

Mr. Cain, who liberated the bird, wrote Mr. Knight as follows in regard to the occurrence: "This is the second Hawk that I have wired, but the first heard from. They often come on board at sea, and for curiosity we often wire them to see in what part of the country we may hear from them."

Frying Pan Shoals Light Ship lies off Cape Fear, North Carolina, a little less than 400 miles from Cape Canaveral, Florida.

The bird lived with this encumbrance about its neck just two months.

For the above facts I am indebted to Lieut. Commander R. D. Hitchcock, Light-House Inspector, 6th District, who sent me all the correspondence on the subject, and also forwarded the wing and foot of the Hawk for positive identification.—C. HART MERRIAM, *Washington, D. C.*

Micropallas whitneyi, Elf Owl, taken in Texas.—I have just purchased from Goodale and Frazar, Boston, a fine male specimen of *Micropallas whitneyi*, taken by Mr. F. B. Armstrong in Hidalgo Co., Texas, April 5, 1889. I quote from Messrs. Goodale and Frazar, in answer to my inquiries: "Date and locality positive. The Owl was taken by Armstrong while camped five miles from Hidalgo, and is the only one he sent us. We were surprised to see the bird from Texas, as we did not know that it got as far east as that, and think it is a very good record. He said nothing about when he shot it or whether it was breeding, but when we write to him again we will make inquiries." This is a bird unexpected in Texas, and especially unlooked for at a low altitude near the Gulf Coast, so far removed from the giant cactus which it occupies so frequently in Arizona.—GEO. B. SENNETT, *Erie, Pa.*

Antrostomus vociferus in Porto Rico.—A box of birds lately sent to me from Porto Rico by Mr. Clark P. Streater contained a female specimen of *A. vociferus*. This is, I believe, the first West Indian record for this species.—CHARLES B. CORY, *Boston, Mass.*

The Olivaceous Flycatcher and Phæbe in Colorado.—At Fort Lyon, Colorado, I took, May 11, 1883, a male *Myiarchus lawrencei olivaceus*, and on April 20, 1884, a male *Sayornis phæbe*. These birds have lately been submitted by Dr. J. C. Merrill, U. S. A., to Mr. William Brewster, who

says there is no Colorado record for the first-named bird, and speaking from recollection, thinks there is none for the second. The birds will soon be in Mr. Brewster's collection.—T. W. THORNE, Capt. 22nd Inf., Fort Keogh, Montana.

The Raven as a South Carolinian.—In 1834, Audubon wrote of the Raven in his 'Ornithological Biography' (Vol. II, p. 2), "a few are known to breed in the mountainous portions of South Carolina, but instances of this kind are rare, and are occasioned merely by the security afforded by inaccessible precipices, in which they may rear their young." Again, on p. 7, he says, "I have already stated that some Ravens breed as far south as the Carolinas. The place to which they resort for this purpose is called the Table Mountain, which is situated in the district of Pendleton." Since the above was penned, the old "district" of Pendleton has been partitioned, and the portion occupied by Table Rock now forms a part of the County of Pickens.

During the early part of July, 1886, I visited this section, and made many inquiries respecting the Raven. I found it was a bird every one was familiar with, and that it continued to breed, not only at Table Rock, but also on the cliffs of the neighboring mountains. In June of the following year I visited the locality again. As I was anxious to devote all my time to the study of the smaller birds, I did not make an attempt, personally, to secure a specimen, but contented myself with offering a liberal reward for one. I was recalled home, however, after a week, and was unable to return to the mountains until June, 1888. In the meantime appeared Mr. Ridgway's 'Manual of North American Birds' with its definition of the new subspecies *principalis*. The statement concerning the uncertainty, through lack of specimens, as to the form inhabiting the eastern United States, stimulated my desire for a better knowledge of our alpine bird. During my last visit I sufficiently increased the bounty offered to put all the hunters of the region on the lookout, but it was not until the 27th of the following January that a specimen was secured, which was shot in a cove near Mt. Pinnacle while feeding on the carcass of a sheep. This long interval was not owing to the great rarity of the Ravens, but to their excessive wariness. I had been assured by all my informants that to capture one was a feat of no small difficulty, and that the best opportunity would be afforded where there was carrion.

A study of the specimen procured led to the conclusion that it could not properly be assigned to either *principalis* or *sinuatus*, it being fairly midway between these two manifestations. Desiring the authoritative expression of the describer of the new race, I sent the bird to Mr. Ridgway, and his identification affirmed the position taken by myself as to its intermediate character. That an example of this nature should occur is not surprising when we consider that the upper country of South Carolina forms a sort of neutral ground where birds of the East, and many that are characteristic of the West, meet. A single specimen, from this region, of any bird having a western conspecific representative is not sufficient evi-

dence to indicate what subspecies is the prevailing one. Whether the Ravens of the Carolinian highlands belong to the northern or to the southwestern form, or whether both varieties occur, or whether they will be found to be so nearly intermediate as not to be susceptible of practicable separation, alone can be determined by the examination of a considerable series obtained at different seasons of the year.

That this species had not entirely deserted the Piedmont region at the time of Audubon's writing, I have lately obtained proof. A friend, still in active life, who has long been an intelligent observer of birds, informs me that between fifty and sixty years ago, the Raven was "plentiful" in the portions of Chester and York Counties contiguous to Broad River which has its source in the mountains of North Carolina about fifty miles distant. None, however, have been seen by him since the War. In Mill's "Statistics of South Carolina" (1826), in the brief account of the birds of Newberry (also on Broad River, but further south in the Piedmont Belt), it is stated that "The Raven has also left this part of the country." Dr. Coues included this species in his "Synopsis of the Birds of South Carolina" (1868) on the authority of Professor Gibbes, whose list of birds (Tuomey's "Report on the Geology of South Carolina," 1848) was based on Audubon's "Synopsis of the Birds of North America." Dr. Coues further adds, "I am under the impression that I once saw an individual at Columbia, but cannot speak positively." Weight is added to this statement by the situation of Columbia at the confluence of the Broad and Saluda Rivers, as the south fork of this latter stream, near its head, flows at the base of Table Rock, somewhat over a hundred miles away.—LEVERETT M. LOOMIS, *Chester, S. C.*

The Lapland Longspur near Chicago in June.—On June 14 of the present year (1889), I took an adult female *Calcarius lapponicus* in full summer plumage at Sheffield, Lake Co., Indiana, which is about sixteen miles southeast of Chicago, on Lake Michigan.

The bird was alone and seemed to be thoroughly at home with her surroundings, being shot near the sand hills close to the lake shore. She was quite fat and appeared to be in excellent condition, but the ovaries showed no approach of the breeding season.—B. T. GAULT, *Chicago, Ill.*

Helminthophila bachmani on the East Coast of Florida.—March 21, 1889, at 'Oak Lodge,' the residence of Mr. C. F. Latham, on the east peninsula opposite Micco, Brevard Co., Florida, it was the writer's rare good fortune to secure two specimens, male and female, of this recently resurrected species.

The ovaries of the female showed only slight traces of development, and this, in addition to the fact that the birds were evidently part of the flock of early migrating Warblers in which they were found, indicates, as might be expected, a more northern breeding ground than the scene of their capture, and considerably increases the area of their probable summer home. Taken in connection with the original discovery of the species by

Dr. Bachman at Charleston, it renders it not unlikely that they still may be found nesting on the Atlantic Coast, in which case, perhaps, it might be well for us to give more heed to Mr. Bailey's record.*—FRANK M. CHAPMAN, *Am. Mus. of Nat. Hist., New York City.*

The Interbreeding of *Helminthophila pinus* and *H. chrysoptera*.—On June 13, 1889, Mr. Samuel Robinson, who has collected with me here for the past fifteen years, noticed a male *Helminthophila pinus*, with food in its bill, fly and disappear at the foot of a small alder. A female *Helminthophila chrysoptera* soon appeared, also with food, and was lost to sight at the same spot as the other bird. On going to the locality five young birds flew from the nest and alighted on the bushes in the immediate vicinity. Both parent birds were soon feeding the young again. He shot the old birds and secured all the young, which, together with the nest, are in my cabinet.

The locality was ground sloping toward a swampy thicket and covered with a young growth of alders. A few maple trees were in the vicinity. The nest was on the ground at the foot of a small alder and partly concealed by overhanging ferns and weeds. It is composed externally of oak leaves and lined with grape-vine bark, no other materials being used.

The male (*pinus*) is a very bright specimen with white wing-bars, edged with yellow. The female (*chrysoptera*) is strongly marked with yellow below, the wing-bars being exceptionally rich with the same color.

The young, two males and three females, are all similar, and have the head, neck, chest, sides and back olive-green. Abdomen olive-yellow. Remiges like adult *pinus*. Two conspicuous wing-bars of light olive, edged with yellow.—JNO. H. SAGE, *Portland, Conn.*

***Dendroica coronata* Feeding upon Oranges.**—While at Enterprise, Florida, last February, I twice saw Yellow-rumped Warblers eating the pulp of sweet oranges. In the first instance the orange was one that had fallen from a cart into the street and had afterwards been crushed so that the pulp was exposed. The little bird tugged at it with all its strength and seemed to have much difficulty in separating pieces small enough to swallow. Some of these were fully an inch long and as large around as a lead pencil. In the second instance the orange had merely cracked open by falling from the tree to the ground beneath. During the entire month of February the orange groves in the vicinity of Enterprise were frequented by larger numbers of these Warblers than I found in other places, and I have little doubt that the fallen oranges formed the chief attraction.—WILLIAM BREWSTER, *Cambridge, Mass.*

Recent Capture of Kirtland's Warbler in Michigan, and other Notes.—
A specimen of Kirtland's Warbler (*Dendroica kirtlandi*), female, was secured by Mr. Knapp of Ann Arbor, Michigan, in the latter part of April or first of May, 1888, at Ann Arbor.

*Bull. N. O. C., Vol. VIII, p. 38.

It may interest the readers of 'The Auk' to hear of the occurrence of the Towhee (*Pipilo erythrophthalmus*), female, at Ann Arbor, in the latter part of December, and again in the early part of March, a foot of snow being on the ground at the latter date.

A small flock of Purple Finches (*Carpodacus purpureus*) was seen on May 24, and a number of individuals secured. It is considered a rare bird in that locality.

Last spring also, I had brought to me for examination an egg of a common fowl about four inches in its long diameter, and the short diameter nearly equal to four inches. The shell was of average thickness, shell membranes normal. This egg not only contained white and yolk, but also a second egg of the usual size, with shell, membranes, and contents perfect. The shell of the inclosed egg was extremely thick. An interpretation of this phenomenon is easy enough; the smaller, normal-sized egg was evidently detained in the oviduct when just about to be laid, and then, having worked back to the region of the oviduct where the shell membrane is formed, met the descending yolk and white of the larger egg. A membrane was then deposited, not only around this second egg, but also around the the first formed perfect egg; then both descended the oviduct, a shell was formed about them both, and the resulting 'double egg' expelled. The failure to lay the first egg may have been due to some temporary weakness of the muscles employed.—F. L. WASHBURN, Cambridge, Mass.

Polioptila plumbea at Palm Springs, California.—During the latter part of April I spent a week collecting at Palm Springs in company with Mr. W. W. Price, and together we secured eight specimens of *Polioptila plumbea*, the first taken west of the Colorado River, I believe. Palm Springs is situated in the extreme western end of the Colorado Desert, about midway between the coast and the Colorado River, seven miles south of Seven Palms, a station on the Southern Pacific Railroad, and about seventy miles from San Bernardino. *P. plumbea* were found in a dry sandy wash near the settlement, in the tangled thickets of the creosote brush (*Larrea mexicana*). They undoubtedly breed there, as two young scarcely able to fly were secured, and others seen. Three males had the black cap fully developed.

Harporhynchus lecontei and *Callipepla gambeli* were found with young, but very shy.—FRED. O. JOHNSON, Riverside, California.

Winter Notes from Portland, Maine. — The exceptionally mild winter of 1888-89 was not without its effect on the birds about Portland. During the fall migration a great many of the Sparrows and Warblers prolonged their stay a week or ten days, or even longer, beyond their usual date. A noteworthy case was that *Dendroica coronata* which remained until December 6. There appears to be no previous December record of this

species in Maine, though it has once been detected at Pine Point in January.*

Robins wintered in unusual numbers in and about the city.

A single flock of Cedarbirds (about twenty in number) appeared on February 6.

But the most interesting result of the mild season was the wintering of *Colaptes auratus*. As a rule this species withdraws very early in November, although my brother saw a straggler on November 13, 1881.† Yet while most of the birds disappeared in the autumn of 1888 about the usual time, I saw a single individual (perhaps the same one) almost every day up to December 18. After that date I met with no more until January 1, 1889, when I found a bird feeding on the berries of a mountain-ash tree within the City limits. A friend reported one on Cape Elizabeth on January 3, and Mr. Luther Redlon, of Portland, an accurate observer of birds, saw one in the Portland 'Oaks' on February 10. I met with one again on February 16, and also on the 25th of the same month. From the latter date up to March 1, not a day passed without my meeting with one. It may be worth while to note that all the birds seen after the first of November were males. So far as I am aware the Flicker has not before been known to winter in Maine, though Mr. Everett Smith has recorded‡ the capture of a single bird at Fort Popham, in January, 1885.—
JOHN CLIFFORD BROWN, *Portland, Maine.*

CORRESPONDENCE.

A Suggestion to the A. O. U. Committee on the Revision of the Check-List of North American Birds.

TO THE EDITORS OF THE AUK:

Dear Sirs:—Perhaps no more important and beneficial advance has ever been made in North American ornithology than the publication by the American Ornithologists' Union of a 'Check-List' which at once became an authoritative standard and assures us of a uniformity and probable fixity of nomenclature before impossible. With intense satisfaction, therefore, should we view a continuance of this work in the labors of the committee whose duty it has become to annually revise the productions of the preceding year and give to the Union the results of their deliberations.

But with how much more pleasure should we regard this committee's

* See Goodale, *Auk*, Vol. II, p. 16.

† See *Proc. Port. Soc. Nat. Hist.*, Dec., 1882.

‡ *Forest and Stream*, February 5, 1885.

labors, if not alone the results, but also the methods by which they were reached, were given to the public. To the ornithologist of today, this is perhaps of minor importance. Still he may desire to know why certain proposed races or species were rejected, while the ornithologist of the future, unaware of the facts which have influenced each decision, may desire to judge for himself, and the non-appearance of any data which have governed this committee in its examinations, causing them to ignore certain proposed changes and alter or adopt others, will, to say the least, be to him somewhat confusing. Would it not be well, therefore, if in addition to its report, this committee also publish an abstract of its proceedings, either as an appendix, as a special paper in this magazine, or in such other manner as it may deem best?

Very respectfully,

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NOTES AND NEWS.

DR. JEROME HENRY KIDDER, one of the original members of the A. O. U., died in Washington, D. C., on April 8, in his forty-ninth year, after a short illness from pneumonia. Dr. Kidder was honored with a membership in the A. O. U. for his very creditable ornithological work in connection with the Transit of Venus Expedition to Kerguelen Island in 1874, to which he acted as surgeon and naturalist. His report, prepared in conjunction with Dr. Coues, was published in 1876, as Bulletin No. 3 of the U. S. National Museum, and entitled 'Contributions to the Natural History of Kerguelen Island,' and 'A Study of *Chionis minor* with reference to its Structure and Systematic Position'. Dr. Kidder was graduated at Harvard College in 1862, and from this date till 1883 was in the military and naval service of the United States, first as a military cadet in the hospitals near Baltimore during the War of the Rebellion, and later as assistant surgeon and surgeon in the U. S. Navy. In 1883 he resigned his commission for special service with the U. S. Fish Commission under Professor Baird. Later he was made Assistant Commissioner under Professor Goode, but soon after resigned to accept an important position in the Smithsonian Institution. In later years his special line of professional work was in the direction of sanitation and hygiene, in which he made many important researches. About a year before his death he sent in his resignation as a member of the A. O. U., on the very conscientious ground that as he was no longer doing work in ornithology he felt it was not right for him to hold a position of honor to which others were so much better entitled. Personally Dr. Kidder was a great favorite with his social and scientific associates, to whom his sudden death was a great shock.

THE first edition of 'The Birds of Pennsylvania,' by Dr. B. H. Warren, State Ornithologist of Pennsylvania, having been quickly exhausted, the Legislature of that State has directed Dr. Warren to prepare a second and revised edition of this excellent Manual (see Auk, VI, p. 170), 19,000 copies of which are for gratuitous distribution to the schools and agricultural societies of the State. In order to make it as complete and trustworthy as possible, Dr. Warren has already issued a circular to the ornithologists of the State, soliciting their coöperation in perfecting the work. The circular is accompanied by a 'Provisional List' of the birds of Pennsylvania, with suggestions as to the character of the information most desired. With the increased appropriation for the work, and the systematic way Dr. Warren has entered upon his congenial task, a much more elaborate manual must be the result—one as creditable to the author, we have no doubt, as is the liberal policy of the Legislature, toward science and the education of the people in ornithological matters, to the great State of Pennsylvania.

The intelligent interest in natural history shown by the State of Pennsylvania is further manifested in an appropriation of \$50,000 to the Philadelphia Academy of Natural Sciences for an addition to its museum building; and also in placing in the hands of its ornithologist, Dr. B. H. Warren, the sum of \$3600 for a complete collection of the birds and mammals of the State. It has also enacted an excellent statute for the protection of song and wild birds, similar in general character to the measure proposed and advocated by the A.O.U. Committee on Bird Protection two years ago. In fact, the passage of so creditable an act is doubtless due largely to the efforts and influence of Dr. Warren and the Chairman of the A. O. U. Committee, Mr. Sennett, both of whom have given public addresses on the subject of Bird Protection in different parts of the State. Further intelligent action in the same general line is the amendment of the notorious 'Scalp Act' so as to exempt Hawks and Owls from its provisions.

SOME time since (Auk, July, 1886, p. 415) we called attention to an announcement of a prospectus of a work in the German language on North American birds, by Mr. H. Nehrling, an Active Member of the A. O. U., and the author of many papers on North American birds, including a paper on the birds of southern Texas, published in the 'Bulletin' of the Nuttall Ornithological Club, and various local lists and popular articles in the German ornithological journals. It now gives us pleasure to say that the publication of the work has begun, and that it will appear in English, under the title 'North American Birds,' as well as in German. The work will be issued in twelve parts, of 40 to 48 quarto pages each, "with 36 colored plates after water color paintings by Prof. Robert Ridgway, of Washington, D. C., Prof. A. Göring, Leipzig, and Gustav Murtzel, Berlin." It is published at one dollar per part, by Geo. Brumder, of Milwaukee, Wis., the completion of the work being promised during the fall of 1890. We have already received Part I of both editions, and find it a work we can heartily commend, as a popular treatise on our birds.

The English version seems not to be a strict translation of the German, but rather a paraphrase, with some omissions. It is to be hoped that, through haste of preparation, the English text will not be suffered to fall below the standard of the German edition.

The biographies are based primarily on the author's own field experiences, and are written in a graphic yet simple and pleasing style. The best authorities, however, are freely quoted. The technical matter is brief, and printed in smaller type at the end of the biographies. The colored illustrations are effective and highly creditable, considering the low price of the work, while the paper and typography are excellent. We trust the work will meet with the success it so well deserves.

THE REPORT of the Ornithologist and Mammalogist of the U. S. Department of Agriculture, Dr. C. Hart Merriam, for the year 1888, contains an interesting account of the scope and character of the work of the Division of Economic Ornithology and Mammalogy, as conducted during the last year. The investigations of a strictly economic character relate especially to the food of Hawks and Owls, Crows, Blackbirds, the Bobolink, the Mink, and the Pocket Gophers and Ground Squirrels of the West, respecting each of which subjects much material has been gathered and partially elaborated, a special 'Bulletin' on the food of Hawks and Owls by Dr. A. K. Fisher, being nearly ready for the press, while the present report contains papers on the Mink, by Dr. Merriam, on the food of Crows, by Prof. Walter B. Barrows, and on the food of the Sparrow Hawk and Short-eared Owl, by Dr. Fisher. Professor Barrows also has a paper on the Rose-breasted Grosbeak as an enemy of the potato-bug. Dr. Merriam has an interesting report on the introduction of several species of Asiatic Pheasants into Vancouver Island and at various points in Oregon and Washington. The Mongolian or Ring Pheasant (*Phasianus torquatus*) seems to have multiplied rapidly, and fears are already entertained that it may eventually prove a pest, at least to farmers.

The work of the Division has already outgrown the appropriations made for carrying it on, and is much retarded through lack of a larger force of assistants for tabulating and elaborating the returns received in answer to the thousands of schedules of inquiry sent out semi-annually to observers in all parts of the country. The Chief of the Division sets forth very forcibly the importance of a knowledge of the geographical distribution of species, and it is to be hoped that our Congressmen will show their appreciation of this important subject in larger appropriations for carrying on the work.

The report indicates excellent progress in the several lines of special work, which are thoroughly systematized and energetically prosecuted.

AN AUDUBON ORNITHOLOGICAL CLUB has been organized in Chicago, with Mr. J. M. Howard as President. At present there are seven active members.